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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — July 6, 1918 — No. 1

Long Staple Cotton Field in Arizona

See Mr. Bemis' Article on Page 3

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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Saturday, July 6, 1918

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THIS WEEK'S COVER

In meeting the war needs of the country California has not disappointed her warmest admirers. Not only have the products which this state yielded for years been greatly increased, but development or increase along new lines have made this state a commercial factor where before she was only making experimental planting. For instance, in rice and in cotton California has added to the country's production nearly $10,000,000 each. We are glad this week to give some illustrations taken in Southern rice fields, with a Californian's estimate of the worth of the industry to this state.

In addition, from Arizona we have an article written by Mr. Bemis, touching upon the great long staple cotton industry of that section. Arizona has proven a wonderful help to the world in the prosecution of the war through the furnishing of long staple cotton which is not grown in the South. There will be particular interest to Californians in Arizona's accomplishment for we are joining Arizona in production of this much needed long staple. Imperial Valley's greatest production has been of an improved short staple cotton. The San Joaquin Valley is now planting almost exclusively to the long staple. We give on cover page a view of an Arizona cotton field.

"Extravagance costs blood, the blood of heroes."—Lloyd George.

W. S. S.

The day of W. S. S. pledging has passed, and it appears the pledges indicate a liberal enough purchase of war savings stamps will be made to cover the two billions asked through this method. The best part of the campaign is that feature which calls for economy and conserving of our funds to be ready to make these purchases.

THUNDER!

Southern California was visited by a freak storm the last day of June and first of July. It was an electrical storm very much like the ones we were used to "back in the states". Lightning struck in the mountains and caused several mountain fires, destroyed oil tanks, and played havoc with the long distance transmission systems. In some sections a downpour accompanied the electrical manifestation, but the damage from rain will be limited.

HOLD BONDS

There have been many cases where purchase of liberty bonds has been made, possibly under a certain degree of pressure, and the purchaser has almost immediately turned and made sale, and, of course, always at a discount. This has resulted in speculation which in the open market means a slight shading. Worse, there were early in the bond campaign many merchants who advertised to accept the bonds, encouraging the purchasers to transfer them, and the same result was accomplished through the merchant putting them later on the market. The government is taking a stronger hand and urges everyone to hold his bonds till the end of the war.

The main duty of noncombatant Americans briefly may be stated as follows: Increase production, economize in consumption, lend your savings to the government, and hold your liberty bonds.

FOURTH LIBERTY LOAN

No announcement is yet made as to the next or fourth liberty loan, but the treasury is asking of bankers subscriptions to treasury certificates of indebtedness which will bear four and a half per cent and mature October 24. This is no indication that the next bond issue will carry other than four and a quarter, in fact, Mr. McAdoo states: "No thought has been entertained of issuing the bonds of the fourth loan at a higher rate than four and a quarter per cent." He is urging that future government loans be stabilized at four and a quarter. He says: "As an intelligent people we should make a stand for financing our government during the period of the war at a stabilized rate of interest," naming four and one-fourth as the proper figure. The patriotism of the American people is not measured by the rate of interest on government bonds. This was indicated in the result of the third liberty loan drive and the war stamp drive.

COSTING MONEY

The financial cost of the war at the present moment is around 50 millions of dollars daily, or about 12 times the cost of running the government before the war. It seems like a great cost until we stop to consider that, divided amongst the people of the land, it aggregates only a matter of 50 cents per day for each one of us. Of course this has to do with the actual cash cost through the government, and not to the cost through increased price of commodities which we all bear less wilingly than we do the war's direct cost.

It is now proposed to raise one-third of the direct war cost during the coming year by taxation. Instead of relying upon the four billions which is raised under the present taxation scheme, it is urged that congress shall revise the tax law so as to raise eight billions, and it is suggested that this should largely be through the levying of a very heavy excess profits tax. In addition the secretary of the treasury has recommended that there shall be a substantial increase in the amount of normal income tax.

"LOTS OF LABOR"

The fruit harvest finds the labor situation most serious. Some sections where best of housing conditions obtain and long wages are paid are harvesting and curing crops satisfactorily. For those industries that can pay the price during a short harvest time the loss from labor shortage will not be great, but industries requiring 365 days of service each year cannot pay the long prices and are suffering seriously. Swine production in the Imperial Valley for instance: The cantaloupe production has been great; the necessity for harvesting quickly made it imperative that plenty of help be secured; long prices were paid, these prices ranging from five dollars up according to skill required. This resulted in the producers of hogs, dairy foods and other 12-month in the year productions, being embarrassed.

Patriotism impelled the sending of numbers of high school pupils to all producing sections. Some of these were quick to take a hand and do their best; others who were offered places on alfalfa and hog ranches at $60 and $70 per month and board refused to take the job unless paid $90 and board, but in any case preferred positions where they could direct other laborers. This from youngsters from the city of Los Angeles who have never done any practical work on a farm. It now appears that the labor and feed situation will result in hundreds of cars less of hogs being shipped from the Imperial Valley this year than during the past year.

In referring to the labor situation the department of agriculture called attention to the fact that in many towns and cities stores are closed and merchants and clerks take a hand in harvesting operations, and adds; "Unselfish service is the imperative demand of the hour." All honor to such service, but meanwhile the farmer desirous of dependable year in and year out service is up against it.

This Week's War Notes

In general it may be said that it is a week of disaster for the Teutons.

The war has now arrived at the place where it is costing the American people $50,000,000 daily.

At a Red Cross fair held by Germans in Cologne a few American prisoners were exhibited in a side show at ten pfennig admittance.

Arrests of 20 persons were made at Nogales, Arizona. It is charged the men were fomenting revolution in Mexico. They had charge of over 20,000 rounds of ammunition and a large supply of rifles.

Submarines are still in action as shown by the sinking of Landovery Castle, a Red Cross ship on its way to England from Canada. She had on board 258 nurses and members of the medical corps; only 24 are as yet accounted for.

The new army bill as passed appropriates 12 billion dollars and provides for any army of three million men, for the organization of Russian fighting legions, formation of government controlled aircraft corporation with a capital of a hundred million, and many details which will guide in the work of the coming few months.

The "work or fight" order which went into effect Monday morning resulted in police war squads making raids on various pool halls and places where loafing is permitted. Warning was given that the new regulation would be enforced to the letter. It is to be hoped that a vast number of the useless callings may be abolished and husky young fellows be put into useful labor.

General Diaz is receiving congratulations from every quarter. He has succeeded in driving the Austrians back at almost every point. The victories along the lower Piave are now being equalled by those in the mountain sections. The Italians are advancing very cautiously and are prepared for any trap. Most careful estimates now place the number of Austrians killed at between 50 and 60 thousand and total Austrian losses at exceeding a quarter of a million.

The Allies are concerned over the great quantities of ammunition and provisions stacked up along the Archangel railway, waiting transportation to Russia. These supplies accumulated during the first years of the war when the Russians were still fighting with the Allies. Only a narrow gauge railway was available to transport them; the Russian government began putting in standard gauge, and the work was only completed when the German peace was signed at Brest-Litovsk, since which time the Germans have been endeavoring to get control of these supplies through the Bolsheviki or the Finnish White Guard acting under orders from Germany. There is now a force of British, French and American marines in the harbor of Kola, Archangel Province.

"The Yanks are coming"—more every day, and it is now rumored that they are distributed over at least 70 miles of the battle line. The efficiency of the American troops is shown in every action in which they have taken part. Artillery action has increased in fury, millions of gas shells being used. There has been during the past week no extended infantry action, and such raids and minor activities as have occurred have been initiated by the Allies. The Yanks came to the aid of hard pressed French in Lorraine, singing, "Hail, the Gang's All Here." Soisson is apparently to be the center of the next plunges of the Germans. This will take in a sector in which the American boys will have opportunity to show their mettle in a larger way. The German war office has admitted that British troops have advanced over a five mile line. The British report the capture of many machine guns, also a trench mortar and larger guns. It has been a terrific jolt, according to report from Amsterdam, to Ludendorf, Hindenburg and their troops to learn the number and effectiveness of the American troops already in France.

The Russians seem to be slowly making up their minds to oust the Bolsheviki. It was rumored for a time that Grand Duke Nicholas had been made czar. Officers and men of the Russian army are flocking to Moscow where an army is being formed under General Alexieff. Grand Duke Michael is also organizing an army at Omsk. Amnesty is being offered to all who assist in rebuilding a stable government. The Czecho Slavs are still holding the trans-Siberian railway. In the extreme north the government of Archangel has proclaimed a state of war; in the south the Germans are in entire control of the Ukraine. However, a large number of mine layers and small cruisers of the original Russian Black Sea fleet have been concentrated at a port in northern Caucasia where they are organizing opposition to the Turko-German advance. Kerensky is in England appealing for allied assistance, and Mme. Botchkareva, leader of the Woman's Death Batallion, is in Washington urging an Allied force of 100,000 American, British, French and Japanese troops in Russia as a nucleus for an army of a million.

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Arizona Long Staple Cotton

By M. E. Bemis

A FAVORITE indoor sport in Arizona is discussion of the question, "When and where was the beginning of what is now generally recognized as the biggest single agricultural industry in the state—the growing of Arizona Long Staple Cotton?" Among old timers there is no agreement as to the beginning, but from the oldest inhabitants down to the newest arrival there is a gratifying unanimity of sentiment regarding the value of the crop to the grower and to every citizen, for indirectly all have been benefited, and to the world at large.

It really doesn't matter much to those of us of today, who had the somewhat doubtful honor of growing the first cotton, because first the short staple cotton which was tried out was not a tremendous success, or at any rate so far as we can learn the same man did not grow it but once, and anyway the early settlers were not the pioneers in the Arizona cotton game because the Indians had grown so far back that its beginning with them is only legendary. Then too before the Indians there were the prehistoric races that built cities that have now crumbled and left only mounds, canals that once carried water from the rivers to the thirsty desert lands and dwellings in the cliffs in the headwaters of the rivers. These people passed away and left no written records of their achievements—nothing remains save these monumental ruins, but within these ancient dwellings we find many things that help us to guess of much of their lives, and among other things we find cloth made of cotton, and we know that they, before the Indian and ages before the white man, grew cotton in the valleys of the Salt and the Gila.

The cotton of the ancient races, the Indians and the early white settlers, was a far different staple from the splendid fibre that is now produced, though it is said that about 35 years ago a bale of cotton was grown near Phoenix which was sent to the New Orleans Exposition and received a premium.

The real beginning was made about 1901 or 1902. Some seed of the Egyptian cotton was planted at the old experiment station northwest of Phoenix. It is said that yields of one variety produced as high as 460 pounds of lint cotton to the acre. For some unaccountable reason no further experiments seem to have been conducted by the state experiment station, but about this same time the United States department of agriculture took up the work, planting a number of varieties at Bard just across the Colorado on the California side from Yuma.

The objects of these early experiments were two fold, first to find a variety that would be adapted to Southwestern conditions and second to gather data on when to plant, how to thin and how much and when to irrigate. At first thought it would appear that since the country along the Nile, where the Egyptian long staple is grown, is similar in many respects to our own irrigated valleys such as the Salt River, Imperial and the Yuma, that any variety that would succeed there would succeed here and cultural methods that were successful there would prove correct for this country. This has not proved altogether true however, and it has required endless patience and untiring efforts on the part of the pioneer experimenters to adapt the Egyptian cotton to Southwestern conditions.

In 1907 experiments were discontinued at the Yuma station and then work taken up at the government station at Sacaton on the Pima Indian reservation about 40 miles south of Phoenix and on the Gila River. All the work was done under the direction of officials of the bureau of plant industry, United States department of agriculture. Among those most actively interested and to whom we are in consequence most indebteded should be mentioned Thos. H. Kearney, O. F. Cook, W. T. Swingle, C. S. Scofield and Chas. J. Brand. The work of supervision, recording results and gathering data was done by E. W. Hudson, superintendent of the Sacaton experiment station from 1907 to 1916 and during the last named year field agents acting in cooperation with the state agricultural service and the United States department of agriculture. At the present time Mr. Hudson is employed as agricultural adviser for the Southwest Cotton Company, mention of which will be made later. He is regarded by cotton growers as the highest authority on the growing of long staple cotton in America.

Brings Wealth to the Southwest
Boll long staple cotton grown in Arizona.

Progress was rapid from 1907 to 1912. One variety had been proved to be adapted to its new home; cultural methods had been well worked out and a considerable quantity of seed had been selected and saved, so in the spring of the year 1912 about 400 acres of cotton was planted in the Salt River Valley. About half of this was planted by Herbert Atha on his farm north of Phoenix. The previous year he had experimented in a small way, but sufficiently to become enthusiastic over the possibilities of cotton growing. About 20 different farmers in the vicinity of Mesa also planted small acreages that year. All of this did very well, and two gins were built, one at Mesa and one on the Atha farm. It might be mentioned in passing that the gins for the long staple cotton are the so-called knife gins instead of the saw gins used for short staple.

The success of Atha and the Mesa growers made cotton growing contagious, and the following year there were about 4000 acres planted. Most of this did splendidly in spite of the fact that many inexperienced growers were trying out new methods.

The following year the acreage increased to 10,000 acres. This was the year of the outbreak of the big war; cotton prices went down to 18 cents a pound for the long staple. Even at this price fields that had had careful culture yielded so well that they paid a profit. The price remained so low during the winter that the following year the acreage dropped back to about 4000 acres, prices began to advance and the following year, 1916, more than 7000 acres were planted in the Salt River Valley and a small acreage around Tucson and also in the Casa Grande Valley.

So far the variety planted had been the original selection of seed from Sacaton, which was and still is known as the Yuma Variety, but this season a new variety which has been selected and bred from one single plant and named by the originators at Sacaton the "Pima" was put out among a few careful farmers, 275 acres being planted of this variety, and the seed carefully saved for planting the next year. Some of the cotton from these fields brought as high as 56 cents a pound, and all cotton in 1916 brought good prices so that the next year, or 1917, the acreage jumped to 34,000 acres in the Salt River Valley alone. Several thousand acres of this was planted to the new and improved Pima. These fields were carefully "rogued" under government supervison and sufficient seed obtained to plant the greatly increased acreage of approximately 75,000 acres the present season in the Salt River Valley. In the Casa Grande Valley and in the Yuma Valley there are several thousand acres of the old Yuma variety. The 1917 crop has sold for 65 to 70 cents a pound for the most part, some selling for more.

Gins have been built in various parts of the valley to accommodate the growers, and several more will be built this season to handle the big crop that is being grown.

The average yield of lint cotton is something under one-half bale to the acre. This rather low average is due to the fact that a great deal of cotton is grown on new land, and yields from such land are generally about half what they are on similar land which has been in cultivation, especially if it is old alfalfa land.

The following are actual results that have been obtained and prove that tried methods are best and are an indication of what we may expect when cotton is grown in a well planned rotation:

Last year a young Mesa rancher, who does not wish his name to be mentioned, purchased ten acres of land and put it into cotton. He did all the work himself with a small amount of outside labor and cleared enough on the cotton to pay the entire purchase price of his land, which was $200 an acre.

J. L. Alexander, (now deceased) raised in 1917 five acres of cotton. His farm was located just a little northeast of the Indian school near Phoenix. His cotton field was a little less than five acres, but he produced 12,000 pounds of seed cotton, or one and one-third bales of lint cotton to the acre.

Warren Parker, manager of Frank Parker's farms, produced in 1917 on 20 acres, 20 bales of cotton. On seven acres of the 20 he produced 2150 pounds of seed cotton to the acre or nearly one and one-quarter bales per acre.

On the Germann ranch at Higley, which is just outside of the Salt River project, but part of the great Salt River Valley, nevertheless, there was produced on a five acre tract last year seven and one-half bales of cotton.

A full blooded Pima Indian on the Pima Indian reservation near Sacaton, on a 12 acre field cleared $200 an acre over his expenses, which included part of the labor of producing and all of the cost of picking. It is interesting to note that this Indian, whose name is Juan James, purchased $500 worth of liberty bonds and thrift stamps out of his profits.

The cost of cultivating land with present prices of land, labor and tools may be estimated about as follows:

Rent of land $25 to $30; (some land owners make terms of 20 per cent of the lint cotton in lieu of cash rent); water, $1.25; thorough preparation of an acre of land, $5.00; planting including seed, $2.50; hand hoeing and weeding, $6.00; man and team for nine months, $30; picking 1800 pounds of seed cotton at three cents, $54; ginning, $12.

This makes an expense of about $140 an acre, and many do not expend this much, but for best results, such as examples noted above, thorough work is necessary, and this is expensive. Yields of one bale to the acre are possible and will in time I believe be the rule rather than exceptional. A bale of 500 pounds or 1800 pounds of seed cotton at 60 cents would bring $300 and at least $20 more for the seed, which would leave a profit that would almost pay for the land.

The labor required to pick the cotton is considerable and especially with as large an acreage as that which was grown last year, and of course more than double this year. Last season a considerable number of Mexicans were imported, many of them being brought in from Mexico by special permission of the United States labor department. It is believed that similar measures this season will insure planty of labor to harvest the crop. Many Indians from the near by reservation are employed and make good hands. The growers are well organized with local associations in the several localities and one central association at Tempe.

Long staple cotton is used for a variety of purposes, such as the making of thread and mercerized goods. The most important use yet, and one which has created a demand far beyond the amount produced, is for automobile tire fabrics. The fibre is exceptionally long measuring in the Pima variety one and one-eighth to one and three-quarters of an inch in length.

Another use which may make it even more valuable now is for wings for airplanes. There seems to be a fairly good prospect that a considerable quantity of the long staple Arizona cotton will be used for this purpose.

The cotton industry in Arizona has received a wonderful impetus through the efforts of the Goodyear Rubber Company of Akron, Ohio. Experts found in 1916 that the cotton grown in the Salt River Valley of Arizona was especially adapted to the manufacture of the fabrics for automobile tires, and this great company immediately took steps not only to produce it but to finance and otherwise assist local growers to produce more and a better quality. In all about 30,000

Continued on Page 7

Agricultural News Notes of the Pacific Coast

Northern California

Tehama County is to have a farm adviser.

Northern citrus sections show promise of normal crop.

Butte County reports its prune crop in excellent condition.

Grass Valley, Nevada County, reports pear blight under control.

Sutter County peach growers are selling their fruit at $60 per ton.

Women cherry pickers in Placer County earn from $2.00 to $4.50 per day each.

Wool Administrator Jastro will soon call a meeting of wool producers of the state.

Sonoma County cattlemen recently met at Santa Rosa and decided to organize a county association.

Field Representative Dargitz of the farm labor committee is planning to import 5000 Mexicans if found necessary.

A large bean grower near Sacramento finds very satisfactory returns from women's work. He is paying 30 cents per hour.

Vacaville now has its first woman's land army, 25 women from San Francisco aiding in farm work. Military camp rules prevail.

Dr. H. A. Payne of the United States department of agriculture is investigating hog cholera conditions in Sacramento County.

Boys and girls of the high school of Jackson, Amador County, have joined the working reserve and are picking fruit and working in canneries.

Most wool growers have completed shearing. Sonoma and Mendocino clip is commanding around 64 cents. Lower grade wools are running around 50 to 57.

Creameries of Eel River Valley, Humboldt County, paid for May butter fat 47½ cents. This is the highest price paid by these creameries at this period of the year.

Peach growers have practically settled upon an 11 and 12 cent price, or rather, recommendations to the food administration. Washington has made no announcement as yet.

The "king" of the fish market in San Francisco has been ordered by the market commissioner to close his place of business for ten days because of alleged violation of law.

The farm bureau of El Dorado County is appealed to to manage the the purchasing of a threshing outfit which will save the ripened grain in Pleasant Valley and other sections of the county.

Expert sheep shearers are commanding at piece rates $40 per day, and one man is reported as having asked increase that would amount to $60. Present shearing rate is 15 cents per head.

The great Berkshire, Grand Leader 2d, formerly owned by A. B. Humphrey, recently died in Pennsylvania where he was sold by Mr. Humphrey after his winning of grand championship at the P. P. I. E.

The Ferndale cow testing association is closing its ninth year. The average production for the 3193 cows for the past year is 304 pounds fat. The highest herd average is that of J. W. Coppini, 510.3 pounds fat.

Central California

Apricot harvest at Hanford, Kings County, is in full swing.

Hughson, Stanislaus County, is harvesting a big honey crop.

Stanislaus County barley fields are producing 10 to 12 sacks per acre.

Corcoran, Kings County, reports its long staple cotton as doing exceptionally well.

Grape men of the San Joaquin Valley met in Stockton, June 27 and discussed standardization.

Modesto reports its warehouses will be more than filled with Stanislaus County's big grain crop.

Alfalfa growers of Woodville, Tulare County, have organized for the purchase of marketing alfalfa.

Some damage to stone and citrus fruits is reported in the San Joaquin Valley from the June hot spell.

Riverbank, Stanislaus County, found no difficulty in securing sufficient help in harvesting apricot crop.

Watsonville and Hollister have agreed to stand together and observe the same labor regulations and prices.

San Joaquin Valley has planted extensively to beans, and the output will probably be much greater than last year.

Tulare County dairymen were recently paid $141,000 in cream checks; this for cream delivered during the month of May.

Fresno district fair is planning for the largest exhibition of farm boys' achievements in the history of the San Joaquin Valley.

While Tulare County dairymen have been pressed to make expenses Dairy Inspector Peairs reports most dairymen have done well.

San Jose Grange Patrons of Husbandry will hold a patriotic meeting in San Jose, Saturday, July 6, also an all day meeting July 29.

California's pear crop which broke all previous records in 1917 is reported as averaging this year about 95 per cent of a normal crop.

The largest single owned acreage of improved property in the Terra Bella irrigation district is owned by a San Francisco Chinaman, Two Mock.

San Joaquin County fair directors recently met at Stockton and because of financial and other conditions decided not to hold a fair this year.

Merced is shipping large quantities of tomatoes, bell peppers, garlic and summer squash. It is proving a very profitable early truck crop section.

The horticultural commissioners of San Joaquin Valley and grape growers are to hold a meeting Thursday of this week and discus standardization.

Tulare business men are discussing the providing of a fund for financing any farm or food production scheme which needs financial encouragement.

United Farmers of Santa Clara Valley have fixed on $3.50 as standard pay for workers in fruit harvest for a ten hour day. The members also have agreed not to entice help away from neighbors.

San Joaquin County farm bureau have resolved that: "If the city of Stockton votes dry for the period of the war, then we ask the board of supervisors to grant no more liquor licenses in the county outside the city."

Southern California

Hemet, Riverside County, canneries will open July 5.

"Finest quality ever" is declared as to the apricot output.

Imperial Valley shipped its first full car of honey June 20.

Antelope Valley live stock men report grazing still good.

Nuevo, Riverside County, is harvesting an immense crop of potatoes.

Suburban electric lines of Southern California are asking for increased rates.

A million dollar cement plant is to be built at White Water, Riverside County.

Hemet apricot dryers are using 150 high school boys and girls in the apricot harvest.

Orange County citrus growers are offering liberal rewards for capture of fruit thieves.

Imperial Valley hog raisers find milo grain fully equal to corn as a finisher of hogs.

Victor Valley, San Bernardino County, is still working for that experimental farm.

Pomona had her "goat day" last Saturday. Milch goats were present in large numbers.

During cantaloupe season Imperial Valley shipped out an average of 500 cars of food daily.

Ventura County farm bureau urges closing of all saloons in California as a war measure.

Imperial honey producers are discussing affiliating with the State Bee Keepers' Exchange.

Kenneth MacRae of Rialto has grown a 40 ton crop of oat hay as intercrop on 20 acre orchard.

The Lankershim Laconic suggests that Uncle Sam's commissary department "no savvy" the apricot.

Southern California has been given a turn at humid weather induced by thunder showers on the desert.

The Elsinore Valley Growers' Association has bought the plant and dry yards of the Dried Fruit Association.

Chino sugar factory employes are being transferred to Oxnard, which mill will handle the crop of both sections.

Farmers at Chino, San Bernardino County, are to make a trial on Saturday of this week of "Farmers Sale and Exchange Day."

Indio and the Coachella Valley generally reports the greatest season's express shipments of early vegetables since the settlement of the valley.

Hemet apricot growers met last week and discussed with officers of the California Prune and Apricot Growers Association disposal of this year's apricot crop.

Prof. H. J. Quayle will conduct a series of fumigation lessons at Covina on July 20. There will be practical demonstrations. Dr. Coit, farm adviser, will unite in the work.

Citrus growers are still watching trees to determine as to the usual "June drop." All is favorable thus far, and it is thought that at least 75 per cent of a full crop will be secured.

Lima bean growers are watching the ship building campaign with particular interest because of the announcement that the principal outlet for Lima beans this year will be by way of the Panama Canal.

The Coast and General

Oklahoma is paying harvesters $4.00 per day.

Roseburg, Oregon, is building a cannery.

Idaho reports wheat has stooled much better than last year.

Southern states report cotton in from fair to excellent condition.

Gem County, Idaho, is building more silos this year than all she had before.

Wenatchee, Washington, is materially increasing its storage facilities for fruits.

Eight hundred Y. M. C. A. boys are camped in the berry fields of Puyallup, Washington.

A cold rain in eastern Washington killed 270 head of valuable ewes for one sheep breeder.

Arizona farmers are appealing for "standardization" or wages as well as of farm products.

Merchants in some Texas towns are closing stores part of the week and aiding in harvest fields.

Isle of Pines citrus growers have found certain low-grade paraffine oils excellent in control of white fly.

Farmers are building a reinforced concrete elevator at Joseph, Oregon, with a capacity of 80,000 bushels.

Cochise County, Arizona, farmers are complaining because of invasion of their fields by Mexican parrots.

The state horticultural inspector of Washington has resigned and will take work with the United States bureau of markets.

The stockholders of the Farmers Union Mockonena Warehouse Company, Washington, recently declared a 40 per cent dividend.

Prof. Lewis of Oregon agricultural college reports Polk County walnut orchards as showing splendid growth with promise of fine crop.

Sunday picnickers near Bellingham, Washington, have been asked to go to the woods and gather spaghnum moss for the Red Cross.

It is estimated that 100 per cent of the population of Nome, Alaska, was on the wharf to greet the first steamer of the season early this month.

The biggest irrigation event in western Canada is to be the gathering of the Western Canada Irrigation Association at Nelson, British Columbia, this month.

Yakima, Washington, has been making a study of pollenization of cherries and finds that Royal Anne set near good "pollenizers" bears much larger crops.

Yuma Valley, Arizona, stock men are feeding mesquite beans to hogs and securing good returns. Indian women gather the beans and sell at $18 to $20 per ton.

A Yuma Valley date grower has been investigating date growing conditions in Mexico and hopes to find bearing dates in that country which may prove of value.

The Arizona state fair is offering free trips to girls who are members of canning clubs and boys who are doing cow testing work. There will be competition at the fair for scholarships.

Colorado farmers are being filled with the story passed on by pro-German propagandists that they should not grow certain crops because the government intends levying a five to six dollar per acre tax.

California Rice Rich in Food Value

By Arthur L. Dahl

IN THE constantly advancing procession of food prices the average American has to give thought to what he shall eat and the relative food values of different articles in the daily menu are coming in for more thoughtful attention. In the process one of the world's oldest and best foods is being given the recognition in this country it has for centuries had in those countries which are the most densely populated in the world.

Rice forms the principal food of one-half the population of the earth. It is more widely and generally used as a food material than any other cereal. Where dense populations are dependent for food upon an annual crop, and the climate permits its cultivation, rice has been selected as the staple food. It is one of the most nurishing foods in the world, is easily handled, will keep indefinitely, and it can be eaten continuously for longer periods without being unpalatable than almost any other single item of food. One pound of raw rice will increase in volume three hundred per cent when boiled; one pound of potatoes will shrink 25 per cent. Potatoes are 72 per cent water, while rice holds only nine per cent. But two per cent of rice is not digested.

Rice is rich in carbohydrates and contains little fat. Analyses show that one hundred pounds of rice contains 87.7 pounds of total nutrients, consisting of eight pounds protein, 0.3 pounds fat, 79 pounds carbohydrates, and ash 0.4 pounds. Boiled rice is digestible in one hour, and hence it is an admirable food when ease of digestion is a matter of importance. In rice producing countries rice is used in the daily food as a substitute for potatoes and wheat. It is eaten alone with a little dried fish or other material to balance the ration. Rice being deficient in nitrogenous food elements, in tropical countries where leguminous plants, such as beans and peas, grow luxuriantly, these vegetables are used very largely to balance the rice ration. In China, Japan, and Java soy sauce, soy bean cheese, or other similar product is eaten with rice in considerable amounts and furnishes a large part of the protein necessary in the daily diet. In the United States rice is coming into more frequent use as a substitute for potatoes.

Most of the rice produced in the United States is grown and milled in the states of Louisiana, Texas, Arkansas, and California. The rice grain as it is received at the mill from the farm thrasher is contained in a hard, silicious hull which incloses the edible kernel. This hull is covered with small needlelike points. Directly beneath the hull, but separate from it and attached firmly to the starchy body of the kernel itself, is a light brown bran coat. The milling process removes the hull, most of the bran layers and leaves only the starchy part of the kernel. As most of the oil found in rice is contained in the germ, which goes into the bran, very little of it becomes available for food except for stock fed upon the bran.

A Louisiana Rice Mill

The rice as it comes to the mill is termed "rough rice" or "paddy." In the mill the rice is taken to the top floor where the cleaning process begins. The rough rice goes over a machine called a "scalper" which removes the sticks, stones and other coarse material by screens and removes the dust and fine particles by suction. From the scalper the rice goes to the "clipper" which removes the long beard and stems; and from the clipper to a "monitor" which, by suction, removes light or blighted grains of rice. The product is now known as "cleaned rough rice" and it is ready for the milling process proper.

The first step in the milling process is the removal of the hull. This is done by having the grains pass through a pair of milling stones similar to the old-style flour-mill buhrstones. These stones, the top one of which usually revolves, are set some distance apart, so that the revolving of the stone causes the grains to assume a somewhat vertical position. In this position a pressure is exerted on the ends of the grain, which cracks or splits the hull, allowing the kernel to drop out.

From the stones the mixture goes to the "stone reel." This reel is a large revolving, octagonal framework covered with wire screens, the square meshes of which are usually 14 to the linear inch. The fine material, consisting of broken hulls, germs and true bran, passes through the screens, while the rice and hulls pass over the reel and are conducted to a monitor which removes the loose hulls by suction.

The rice stream next goes to the "paddy machine" which separates the rough from the hulled rice. The paddy machine is a large, mechanically-operated box shaker with zigzag divisions formed by vertical metallic plates. These plates, together with the shaking, separate the light unhulled grains from the heavier hulled grains. The unhulled grains are directed toward auxiliary stones set closer together, where the hulls are broken.

The natural brown rice from the paddy machine is conducted to a set of "first-break hullers." The huller consists of a grooved, tapering cylinder revolving within a concentric hollow cylinder so spaced as to rub loose a portion of the bran coat with as little breaking of the grain as possible. After leaving the first set of hullers the loosened bran is removed and the rice goes to a second set of hullers, where the same process is gone through with an additional quantity of bran rubbed off of each grain. During this process the grains become very hot from the friction and they are accordingly run into cooling bins and allowed to remain for several hours to regain their normal temperature. From the bins the grains pass on to their final milling process, which consists of running the grains through what is known as the "brush." This brush consists of a vertical cylindrical frame covered with a thick padding of soft leather strips. This frame revolves at a high rate of speed within a cylinder of wire screen. The rice enters at the top of the brush and is rubbed smooth by friction with the brush and screen while passing to the bottom of the machine. The rice leaving the brush is suitable for market, though it is usually graded by machines.

The by-products of rice milling consist of three substances, rice hulls, a rice bran, and rice polish. These by-products are used for various purposes, including the fattening of live stock with the bran.

The fact that rice requires to be grown in standing water restricts the localities for its culture to those where water is plentiful, the lands are level, and the subsoil semi-impervious to water to prevent excessive waste. Many such localities are found in the South, and in California. In the latter state, although the industry is comparatively new, great progress has been made and the acreage devoted to this crop now runs over 100,000 acres. Owing to the long, warm growing season the California rice is of superior quality and easily competes with the finest imported from Japan and India.

For rice culture the lands are plowed as with other grain crops and the seed is sown early in the spring. After the seed has been sown the ground is lightly harrowed and a small amount of water run onto the land to insure germination of the seed. When the rice reaches a height of from six to eight inches, the lands are flooded to a depth of from three to six inches and the water remains on the growing fields until the grain is ready for harvesting, when it is withdrawn to allow the soil to dry out sufficient for cutting the grain. While the water covers the growing grain it is kept constantly circulating or renewed, to prevent stagnation.

Rice is not a great impoverisher of the soil, especially if the straw and chaff are regularly returned to it. It is also claimed that the flooding of the rice fields restores to the soil as much nutritive material as the rice crop removes. This is partciularly true where the lands are flooded from large rivers carrying silt, such as the Mississippi.

When the rice has become fully grown and is ripe, the water is drained from the fields and the harvesting begins. Where the ground is not too soft reaping machines are used, and in other instances the grain is cut with hand sickles. Tractors, with their broad wheels or endless track means of locomotion, have been found very valuable in rice fields, as their weight is so evenly distributed and they possess so much power. that they can be successfully operated upon lands too soft to permit horse-drawn machines.

The rice is cut at 6 to 12 inches from the ground, and the cut grain is laid upon the stubble to keep it off the wet soil and to allow the air to circulate about it. After a day's curing the grain is removed from the field. The grain is shocked upon dry ground and the shocks are built to protect the heads from the wind and rain. When the weather is dry, 10 or 12 days after cutting is sufficient for completely curing the grain. The rice is thrashed in the regulation steam thrasher, or one operated by the motor of a tractor. The grain is placed in sacks and hauled to the mills, where it passes through the process already described.

Hauling Rice to the Warehouse in Texas

Shipment of Rice in the South
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Nitrogen Problem in Citrus Culture

PROF W. P. KELLEY of the University of California, connected with the citrus experiment station at Riverside, has investigated many soil problems, especially those which confront the citrus grower. In discussing the nitrogen problem Prof. Kelly has said:

The continued success of the citrus industry in Southern California is probably as directly dependent upon the proper maintenance of the organic matter of the soils as upon any other factor. The virgin soils in many sections contain very limited supplies of organic matter and the intensive methods employed promote rapid decomposition. Under the existing conditions the physical, chemical and biological conditions consequently tend to become unfavorable for the growth of citrus. Closely connected with and indeed almost inseparable from the organic supply, is the nitrogen question, for the nitrogen content of soils in general is roughly proportional to the amount of organic matter present, and the nitrogen occurs mainly in chemical combination with the organic matter. Therefore the methods employed in maintaining the organic supply, if properly selected, should go far toward providing the element nitrogen upon which citrus makes relatively heavy demands.

The liberal use of manure and leguminous cover crops will insure the maintenance of the organic matter, but once nitrogen is incorporated with the soil, a second and probably more difficult problem arises, namely, the securing of the maximum efficiency from the nitrogen present.

As is well known, soil organic matter undergoes decomposition as a result of biological agencies and insoluble organic nitrogen becomes oxidized into soluble nitrate. The process of nitrification is conditioned upon and susceptible of modification by many factors, some of which are physical, such as aeration, temperatures, etc., some chemical, as for example acidity, soluble salts, etc., and others biological, such as the acidity of other groups of organisms. In general the evidence to date indicates that nitrification becomes quite active in the lighter soils of Southern California wherever sufficient nitrogenous materials are present and the moisture conditions are suitable, provided an excess of carbohydrate be not present. Plowing down a strawy manure or mature cereal cover crop, such as barley, will likely induce poor nitrogen conditions for considerable time due to the action of the cellulose and carbohydrate consuming bacteria. These organisms consume relatively large amounts of nitrate in their activity and also at the same time probably seriously interrupt the process of nitrification.

In the heavier soils such as occur near Whittier, in portions of Orange, Ventura and Tulare Counties, for example, insufficient aeration and excessive amounts of water in the soils, either as a result of rain or improper irrigation, probably go far to bring about insufficient nitrification, but with the more porous soils, nitrification is likely to be quite active wherever nitrogenous materials are applied.

While it is true that nitrification takes place in the subsoils of semi-arid California, at least to some extent, the chief nitrification is largely confined to the first foot and frequently to the cultivated zone. The cover crop and fresh organic materials become incorporated with this upper layer of soil and consequently the main decompositions must necessarily take place there. Unfortunately, however, comparatively few citrus roots occur in the cultivated zone, due to interference by cultivation and unsuitable moisture conditions.

The matter of securing suitable distribution of the soluble nitrates once they are formed at once suggests itself. The furrow system of irrigation predominates, and in many sections a more or less dense plowsole occurs which often becomes increasingly evident as the irrigation season advances. Under these conditions the irrigation water moves downward to the plowsole, then laterally, carrying the nitrates with it. Considerable time may elapse before the irrigation water breaks through the plowsole, consequently the soluble nitrates are swept toward the zone to a somewhat midway position between the irrigation furrows and only a small portion is carried below the plowsole where the feeding roots mainly occur. As the season advances this tendency becomes aggravated; capillarity tends to bring nitrates toward the surface and consequently the distribution of nitrates becomes less and less favorable as the season advances. Under such conditions the nitrogen problem may become acute even where there are abundant nitrates in the upper layers of soil.

With the nitrates concentrated above the root zone, the heavy winter rains falling over the entire surface penetrate into the sub-soil, carrying the nitrates downward, thus causing relatively large losses of nitrogen. Experimental data obtained at Riverside indicate that in some cases more than 50 per cent of the nitrogen applied as fertilizers is thus leached below the point of recovery by capillarity or tree roots.

The indications are that a solution of these problems lies first, in the liberal use of organic materials including leguminous cover crops. In this way it is possible largely to prevent serious plowsole formation and secure a more uniform circulation and movement of the nitrates that are formed in the upper layers; second, the fertilizers and cover crops should be plowed down rather than be left on or near the surface. There is more evidence, however, that mulching also offers a solution of the problem. Under a suitable mulch, the moisture content of the surface soil may be maintained at more nearly the optimum point and tree roots be encouraged to come near the surface where the nitrate supply is likely to be abundant.

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ARIZONA LONG STAPLE COTTON

Continued from Page 3

acres have been leased and purchased and operations were begun on a big scale. The local name of the company is the Southwest Cotton Company. A considerable tract of land about 25 miles southeast of Phoenix has been reclaimed from the desert, water being pumped from wells by hydro-electric power which is developed from the Roosevelt irrigation project. A new town is being built which is called Goodyear. West of Phoenix about 15 miles is another large tract of land that they have likewise reclaimed and which is being watered from wells, the power also being from the Roosevelt project. Another new town is being built here. In all this company has expended about $3,000,000 in development work. This past season in addition to the cotton which they produced on about 6000 acres they have purchased of growers about $3,000,000 worth.

Other tire companies are glad to get the cotton if enough could be secured to make it worth while, so that with the other demands and other uses it would seem there would be little doubt of an assured market for all that can be produced for all time.

Egyptian cotton has been a powerful factor in increasing the value of farm lands in the Salt River Valley, although it has by no means created a boom. Land values have steadily advanced in keeping with the value of the product grown. It is obvious that the profit from one season's crop should not be as great as the value of the land, or conversely the land is worth considerably more than a season's profit.

Cotton here as elsewhere has a distinct place in a well planned rotation. Here where alfalfa is at its best, the most profitable farming in the long run is that where alfalfa is the principal crop and fed to live stock. To keep the alfalfa up to its maximum a rotation is necessary, and one good money crop in a rotation where alfalfa and live stock are the basic principles of the farming fits in well with almost any sort of a rotation, that is it can be made adaptable.

Cotton is planted here in March, begins to blossom in June, and cotton picking begins in early September, continuing until after Christmas. It is an all season crop, but with good management the land may be put in a grain crop and a good crop produced the next season, leaving the land for a crop of corn or grain sorghum following the grain the same season.

In these times when it is necessary to produce both food for human beings and feed for stock, it sometimes seems that to produce a crop like cotton is not patriotic, but let us see. From each 1000 pounds of seed cotton, and it may be said that this is about the average yield for an acre of old land, we would have, besides about 400 pounds of lint cotton, 20 gallons, or 150 pounds of cotton seed oil, a most valuable food product and approximately the amount of butter fat that might be produced per acre for a farm where dairy cattle were kept. There would be, too 500 pounds of cotton seed meal, one of the richest concentrated cattle feeds and a product which is now being used to some extent for human food. We would have too, 250 pounds of cotton seed hulls, a fairly good stock food, and 25 pounds of linters of especial value now for powder making.

So while we may regret to see choice alfalfa fields plowed up to be planted in cotton, there is considerable compensation in the fact that no little amount of food is produced as well as the valuable lint. In view of the fact that thousands of acres of desert land have been brought into cultivation to be planted to cotton it is probable that in spite of the thousands of bales of cotton that are shipped out and bring good prices to the producers, that there is very little less stock feed and human food produced now than formerly, and yet it is probable that our alfalfa acreage will be less this season by 15,000 acres.

Cotton too has its value in war times even more than in peace. We hope to grow the cotton for the wings of the airplane that shall drop the first bomb on the palace of Berlin. We expect too, to equip with tires made from Arizona cotton the autos for the triumphal tour of Pershing's staff through Germany.

CAPRIFYING THE SMYRNA FIG

Written for California Cultivator
By Claude D. Tribble

SUCCESS with the caprification of the Smyrna fig depends on getting the capri figs in the Smyrna trees at the proper time. The fig becomes receptive when about one-half to five-eighths inch in diameter and when it shows a peculiar lustrous, lively light green color.

In some localities the blastophaga, or fig insect, does not issue soon enough to pollinate the first Smyrnas that become receptive, and these are lost unless the grower sends to another district where the insects issue earlier. We exchange later capris with growers who have earlier. Our season for the capri, with our many varieties and seedlings, begins from June 20 to 30 and lasts from August 1 to 15.

We place strawberry baskets in the trees and are very careful to have them shaded as well as possible, for if a capri fig is placed on hot ground all insects in it will be dead in less than an hour. About four baskets should be used in a large seven year old tree. This distributes the insects better and not so many enter the same fig.

In gathering the capri figs they should be allowed to fall on the ground so the milky end will fall in dirt to prevent the sticky gum from trapping the insects. Where capri figs are shipped the ends should be stuck in dust to dry up this milky gum.

The capri should be pushed off the tree with thumb or finger instead of pulling with the hand, which often mashes the inside and kills some of the insects. The capri begins to show a light color; the eye or hole in end begins to open and the fig softens when insects are about to issue. Pollen may be seen around the end of fig where the insects have crawled around before one may discover the insect itself.

On quite warm days the first insects issue about nine o'clock a. m. and after four p. m. but few if any will be seen till the day following.

The best method is to renew the capris every fourth morning as long as they are needed or they last, and we are informed by some growers that owing to the very high price offered for the Smyrna dried figs that they will use from 60 to 100 capris per tree for this season.

Many of those who have Smyrna fig trees who buy capri figs consider caprification a failure on account of figs being too old when capris are received, and the main error is the failure to have capris sent in two or more shipments three or four days apart. Most amateurs order a few figs not knowing how many are needed and think one lot should suffice. Our advice would be to order not less than 50, if for only one tree, and have these sent in two or more shipments and four days apart. A grower cannot ship less in two shipments, and avoid mailing where possible as the express seems to get them through with more care in handling.

Where the Smyrna grower has his own capris he should use them every third day as long as they can be had. Another mistake is trying to buy capris in March and April to save the first crop Smyrnas, as this crop carries no staminate or pollen flowers and is useless. To buy figs to colonize capri trees the fall crop of September and October and the winter crop of March and April are most successful, and a capri tree should be at least five years old before an attempt to colonize it should be made, as trees younger than this seldom carry all the crops through the three crops. If one wants the summer crop for use in Smyrna trees it is well to get the spring capris for this purpose, and it is possible to perpetuate a colony therefrom.

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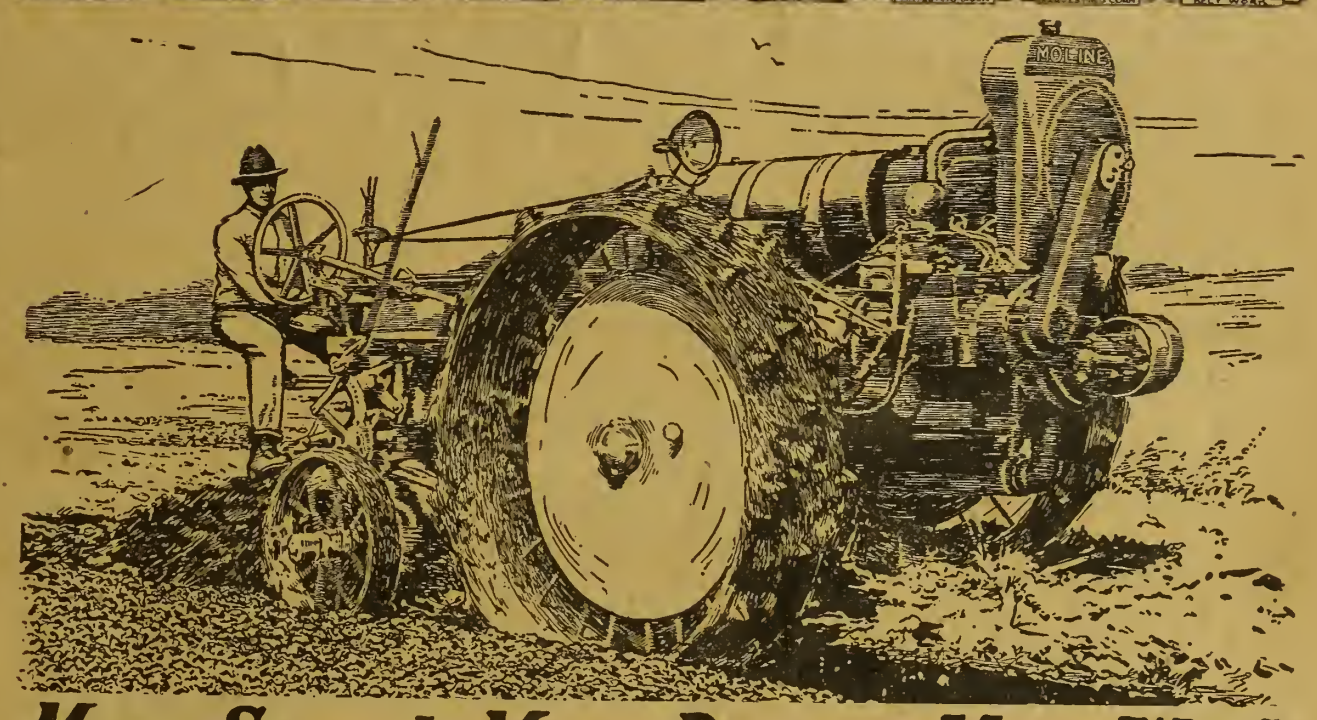

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Ornamental Planting Calendar for July in Northern California

Written for California Cultivator By A. R. Gould

MUCH of the work this month in this department will be in the nature of staking the taller subjects such as hollyhocks, Canterbury bells, campanula and C. pyramidalis, cosmos, Michaelmas daisy, or hardy aster, chrysanthemums, dahlias, etc. If these are tied up neatly they will repay for any extra care. Besides constant watering, the hoe must be kept busy. There will also be bugs to deal with, and they must be kept down. A few seeds of the spring flowering subjects may now be collected from such subjects as primula polyantha, wallflower, pansy and viola, double daisy, myosotis, Arabis and allyssum, and these may of course be sown in well prepared soil in boxes for planting out in a month or two to supply an extended display in the coming spring season.

Begonias

The more common bedding types such as semperflorens, Vernon, Fairy Queen, etc., will just now be coming into flower, and should any of our readers not have planted the more fancy or tuberous types, which revel in a shady position, you can usually secure pot plants for this purpose from your nurseryman. Furthermore, they make nice subjects for a porch window box or for the table as specimens, and if they are to be grown all the time in pots they will need a little extra fertilizer or liquid manure water once a week. Those of the tuberous type may be kept from year to year and the semperflorens, or fibrous type, are propagated by root division and cuttings and also held over or they may be left in the ground, at least the older root clumps.

Snapdragons

These very popular flowers will now be providing a grand display, and it is not at all unlikely that they will be showing signs of rust, that terrible fungus disease which will usually be found on the underside of the leaves and stems. If the attack is very severe it may kill the plants before their full flowering period is over. In fact it is oftentimes only a matter of three or four days after the red rust-colored spores have developed and are ready to be carried around by the wind that the plants fall a prey to the disease. Once the disease spots have become distinct it is very little use to spray, and spraying will only prove a preventive measure in the very early stages of the growth of the plant, and then Bordeaux mixture or a sulphur fungicide should be used several times before the flowering season. Strictly speaking the snapdragon is a perennial, but owing to this disease it can only be grown as an annual. They usually provide a splendid color display and bloom profusely for several weeks and they are well worth growing. A weekly watering with liquid manure will be of great help to the plants this month, and the taller growing types should be staked.

Dahlias

It will be a good plan to disbud many of these, that is, remove the two buds on either side of the main terminal bud on each shoot. This will give larger flowers. A mulching with manure or leaves placed around the roots will be of very great benefit and will save quite a little watering. The small black fly has been troubling the dahlias this season extensively, and this should be frequently sprayed with nicotine solution Black leaf 40.

Roses

Keep the dead blooms cut off, and any plants showing signs of rose rust should be severely pruned and all the infected leaves burned. None should be left on the rose bed as the spores will infect all young growth. A certain amount of mildew may also be prevalent and a sulphur solution such as Qua-Sul should be used as a spray. Many of the more vigorous growing varieties may be cut back and a late supply of blooms will result.

Primulas

Primulas of the type of P. malacoides, a small free flowering pink variety, and P. obconica in various colors are very satisfactory grown either in pots as house plants or for window boxes, or they are equally good for the sheltered flower border. Sow the seed of these now in pots or boxes, on well prepared sandy soil, keep shaded and fairly moist. P. vulgaris, the English primrose, and P. polyantha and P. veris may also be sown as above.

Cineraria

These shade loving flowers may be secured in tall and dwarf types and are of various colors. A sowing may now be made in a box of soil which should be made up chiefly of leaf soil and sand.

Lawns

Any weeds appearing should be removed immediately as once they get hold they soon spread. Keep well supplied with water.

VEGETABLE PLANTING CALENDAR FOR JULY IN NORTHERN CALIFORNIA

Written for California Cultivator By A. R. Gould

ALTHOUGH it is getting late in the season for very extensive planting and will not be practical to take in much more idle land to plant this year, owing to the fact that it would need too much water to get it into shape, there is no need to slack up on production. The need for war gardens is still great, and all the ground which has been brought under cultivation should be intensively cropped, and as soon as one crop is off another should be under way. Never allow the weeds or pea tops to occupy the plots. Remove them and follow up with more beets, turnips or carrots. The keen gardener will always be thinking ahead and will thus keep busy. It meant much hard labor to prepare the plots, and it now only needs a little careful manipulation to keep the machinery in running order. Uncle Sam requires the help of every one in food production, and there is lots of land to spare.

Beans

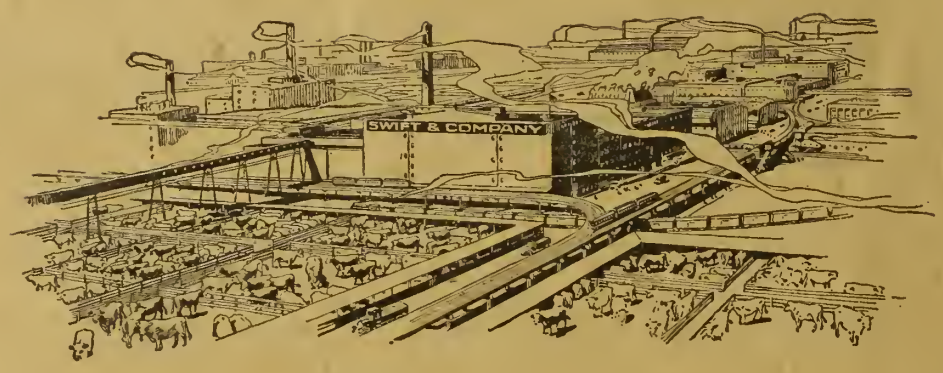
You can still sow those mentioned last month and include that now popular small white Tepary which is just the bean for a dry situation. The yield will repay many times over.

Cabbage and Cauliflower

Seeds of Autumn King and Savoy, the best varieties for winter use, may now be sown in boxes of well prepared soil or on a border. Sow sparingly in rows or broadcast. Cauliflower sown last month should be ready towards the end of the month to plant out nine inches apart in rows which should be 18 inches apart. Supply these with plenty of water.

Corn

It is not too late even yet to sow more corn. It will prove a welcome



A business that is as big as its job

KEEPING a nation of over 100 million people regularly supplied with meat and meat products is a big and complex job.

And a still bigger job when to it is added the needs of the American soldier here and in Europe and of the Allies as well.

It is a job of converting the live stock of the West into meat and meat products and distributing them in perfect condition over long distances to the consuming centers —the North, South, East, West and abroad.

A job of supplying with *unfailing regularity* products that in the main are perishable, in the exact qualities and quantities needed, to the smallest out-of-the-way village as well as to complex and congested metropolitan centers.

Only organizations like that of Swift & Company, with its highly-specialized methods of meat-dressing, its hundreds of branch-distributing houses, and its thousands of refrigerator cars, could have handled such a job efficiently and at a minimum of expense in the present war emergency.

Today American meat and meat products are the recognized standard of the world.

And the economy with which these products are produced is indicated by the fact that today the meat of a steer, dressed, is sold for less than the cost of the steer on the hoof! The proceeds of by-products, made out of what once was waste, have made this possible.

The size of the job has dictated the size of America's packing industry. And America's packing industry has proved itself to be equal to its job.

Swift & Company, U. S. A.

A nation-wide organization with more than 20,000 stockholders

crop and will come in succession. Sow the variety Golden Cream. That destructive moth which lays the eggs from which are produced the corn worm will be busy again in many districts. It destroys the top of many fine cobs of corn. The moths may be trapped by placing a tray of vinegar and molasses amongst the corn. The victims should be frequently removed.

Lettuce

Keep a successional sowing and never let these suffer for want of water. California Cream Butter is excellent for fall use.

Kale and Brussels Sprouts

Sow the Tall Green Kale and Aigburth Sprouts on a semishaded border, and during the month have the plot well prepared. It will pay the poultry keeper to raise a considerable quantity of kale for green feed.

Peppers

Plants of the large Bell or Bull Nose variety may be secured from the seedsman and planted without delay.

Turnips

Those sown last month will need drastic thinning out, leaving them four to six inches apart. Keep the hoe moving throughout and keep well supplied with water to insure quick growth.

Call for War Workers

THE Y. M. C. A. has need for 4000 workers, men and women, who are above the draft age, for service in France in order to keep pace with the rapid expansion of the nation's military establishment and to satisfy the demands upon the organization for workers in the French and Italian armies. The national war work council has undertaken a comprehensive campaign to secure these workers. The winning of the war will be delayed with a consequent increase in the loss of life and drain upon our natural resources unless we can secure the services of these men to care for our soldier boys.

Appeals for volunteers are intended primarily for the man who feels that he belongs to the "skipped generation," the man whose father gave his all a half a century ago and whose sons are now fighting on the western front. Dr. John R. Mott, general secretary of the national war work council, who has recently returned from France, declares that there have never been such opportunities for the middle-aged man to render patriotic service as are offered by the work which has been intrusted to the organization whose emblem is the red triangle.

Some of the biggest men in the United States are now working enthusiastically in France at what they would have considered small jobs a year ago. "These men," said Dr. Mott, "must have many, many companions before this war is won. In fact, we ought to recruit 2200 before July 1, and 1000 a month in July and August merely to do the work that is now presented to us. After that, no one can tell what the needs will be.

"We need all kinds of men. The post exchange business, which General Pershing has intrusted to us, presents opportunities for skilled executives, transportation experts, accountants, clerks of all kinds, warehousemen and the like. In our motor transport service we need automobile drivers and mechanics. This branch of the work should be especially attractive to the man who owns his car and can drive it and make minor repairs. Athletic directors are most important. The relaxation which they provide for war weary troops has a value which cannot be estimated. Hundreds of men who can direct mass play are needed today in France and Italy.

"It is not fair to ask the workers who are now bearing the burden to carry the load alone. Secretaries serving alone at the front are breaking under the terrific strain. They should be relieved as soon as possible. We here in the United States must settle down to the belief that this is going to be a long war. Therefore, we must have a great reserve force of workers to be prepared for any contingency. We who are too old to fight should deserve to be called slackers if we fail in this obvious duty."

On this basis the Y. M. C. A. is prepared to wage a campaign that will have its units in every state, every county and every community in the United States.

Somewhere in France

Captain Robert Pearson, a Y. M. C. A. worker, coaching a bunch of Canadian soldiers as to the rules of the great American game which the captain is to umpire. Photo by courtesy of Canadian War Records.

Care in Threshing Will Save Grain

Waste of grain through inefficient operation of threshing machines, though not serious to the individual farmer, may take millions of bushels from the nation as a whole and from the nations that are looking to us for food to ward off famine.

To point out ways in which such losses may be reduced the United States department of agriculture has issued Farmers' Bulletin 991, "The Efficient Operation of Threshing Machines." Copies of the bulletin will be sent free on request to the department.

If the threshing machines used in this country wasted only three or four bushels of grain out of every thousand they threshed, the loss of wheat alone in the United States every year would equal a quantity sufficient to furnish a normal supply of bread to a million people for nearly six months.

"How's your garden?" one Wheatridge man asked another. "House your chickens," was the courteous and earnest reply.—Denver Field and Farm.

Speed up with Electric Power

"Production and Not Acreage is the Measure of Profit"

HERE are some of the ways in which modern industry has been speeded up by putting electric power to work in the right place.

Metal mines have boosted output to meet world-wide demands. Great central power plants in place of small local plants in coal mining areas now supply cheaper electric power per ton output for each mine. All tonnage records have been smashed in the steel industry. Greater automobile output has lowered prices and given better road transportation. More and better cloth has been produced at lower power costs.

Through the use of electric motors many farmers are also securing the high production obtained in the big manufacturing industries.

Over 200,000 H.P. in G-E motors is now at work in this way on the Pacific coast.

2500 G-E Motor Agents throughout the country are ready to help you reap the benefits of doing your work the electrical way.

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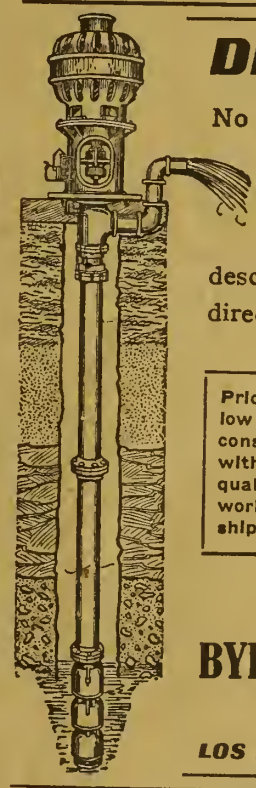

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A complete line of irrigating pumps of all descriptions, horizontal and vertical for belt drive or direct connection to electric motor.

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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

July Vegetable Garden in Southern California

Written for California Cultivator By D. F. Reichard

JULY is the month when the vegetable garden repays its owner for the care he has given it the last few months. Get the full benefit of your garden by gathering stuff when it is at its prime. Pick the string beans while they are tender, the green corn before it gets too hard; pull the root crops, carrots, turnips, beets, radishes and the like while they are crisp and tender.

If there are more vegetables than can be economically consumed sell or give them to your neighbors, or can or dry all that is practical for winter use. The important thing is to harvest the various vegetables when they are at their prime. In the case of most vining vegetables such as melons, cucumbers, beans and squash, the plants keep producing more and better crops after the matured fruits are harvested.

There are crops, however, that will leave the ground idle when they are harvested. These spaces must not be left long, for it is the patriotic duty of everyone with a piece of ground and enough water to put and keep it in tillable condition to produce something. California can produce millions of dollars worth of edibles in her fall vegetable gardens. Whatever can be produced at home for home consumption is that much released to go on to our boys who are giving their all that this world shall be a decent place in which to live.

There are advantages in planting fall gardens. The weeds do not grow as freely as in the spring; there are fewer insect attacks and the stuff comes in ready to harvest when vegetables in general, and summer vegetables in particular, are scarce and prices high.

The all important thing about planting during July and the few following months is to get enough water into the ground to get a proper seed bed. The best way to attain this is to thoroughly soak the soil before spading or plowing, and pulverizing. If the ground is free of trash and refuse it may be planted directly after this one working while the moisture is still at the surface. Should there be considerable roughage the plot should lie for a few weeks after working to allow the trash to decay. By that time the ground will have to be soaked again, worked up and thoroughly pulverized. Sow the seed and set out plants as soon as possible, while the soil is still moist on top. All seed should be planted deeper during summer months than at other times on account of the surface soil drying out so rapidly. Such small seeds as lettuce, carrots and turnips will give best results if planted from one to one and a half inches.

Practically everything in the garden line can be planted during the early part of July, but it must be kept constantly in mind that great evaporation is continually going on, and moisture must be supplied by frequent irrigations. Where peas and beans have been harvested and the vines taken out, replant with root crops or corn, either sweet or field varieties. Where root crops have been taken out replantings of Limas and Snap beans should be made. This arrangement is for rotation purposes to keep your soil in good condition. Other vegetables that are seasonable for early July planting in open warm valleys are muskmelons, casabas, watermelons, cucumbers, squashes and pumpkins. The latter part of the month potatoes may be planted for the fall crop.

PLANTING CALENDAR FOR JULY IN SOUTHERN CALIFORNIA

Written for California Cultivator

THIS is the season when closest attention must be paid to irrigation. The lawn browns up, and that finest of lawn grasses, blue grass, and white clover are in danger. Bermuda, which is hardy under almost all conditions, will continue to thrive under neglect. A dressing of finely ground bone meal at this period of the year, washed into the roots, helps wonderfully in greening up the lawn. The weeds are putting in their best efforts to gather as much moisture as possible.

Insect pests are hatching as never before, and liberal use of the spray pump will save many a plant.

Keep plenty of water on the dahlias. They are showing a wonderful bloom this year. The season has been very favorable.

An application of stable manure on the surface around the gladiolus will increase the size of the bloom. Glads are becoming more and more a favorite. If there are any bulbs of the glads which have not been planted they should be put in the ground as soon as possible; they are losing vitality for every day kept out this late in the season. Cannas in some of the newer varieties are most persistent bloomers and are wonderfully beautiful. Iris are now in their resting season, and during the next two months is the proper time of the year for dividing and resetting or for securing new varieties.

Presumably all the narcissus have been taken from the ground, and the bulbs are curing for the fall plantng, but one variety, the Campernelle, which blooms in the fall, should be planted soon. The spading of well rotted manure will prepare the ground for spring varieties.

Continue to plant seeds of annuals; they will afford bloom after the chrysanthemums are gone. Plant pansy, stocks, Canterbury bells, cosmos, candytuft, gaillardia, phlox, petunias, scabiosa, etc.

The seed of eucalyptus may well be planted now and then to afford a tree to fill in the woodlot or for ornamental purposes in various out-of-the-way nooks. Seed planted at this time will afford a tree ready for spring planting.

Sulphur the roses. Mildew is encouraged by the foggy weather which has been more plentiful than usual. Scatter the sulphur in early morning when leaves are moist. Late in the month it may be well to withhold water until all growth is stopped and even until some of the more recent growth is shrivelled. If kept in that condition, then heavily pruned, a wealth of Christmas bloom may be secured.

PLANTING CALENDAR FOR ARIZONA

As issued by immigration commission of Maricopa County:

Vegetable Seeds: Beets, cabbage and cauliflower in a shaded bed, casaba, corn, pumpkin, squash and Kentucky Wonder beans.

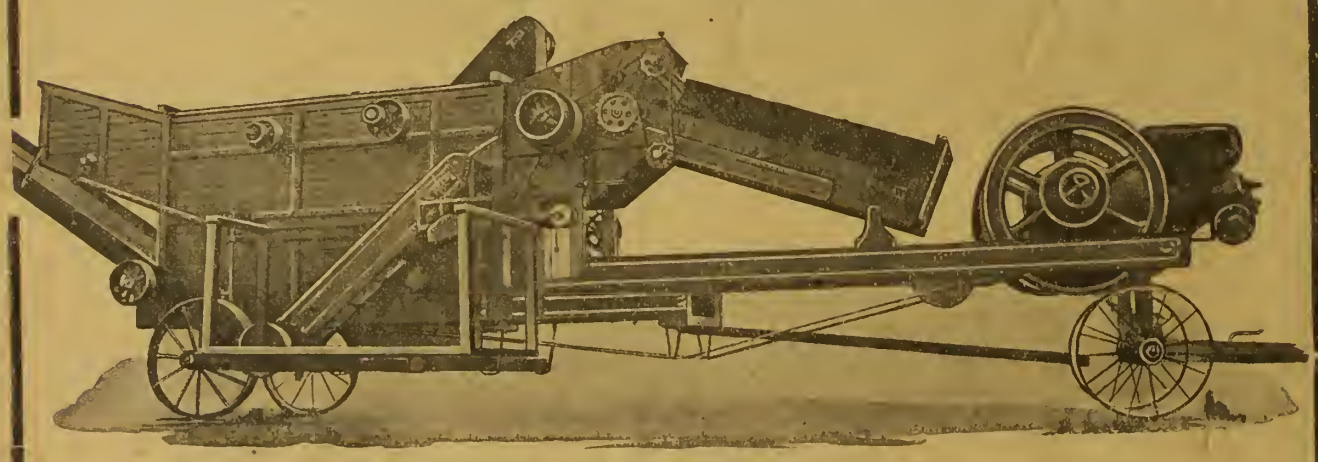
Flower Seeds: Cosmos and zinnia.

Field Seeds: Bermuda grass, cowpeas, corn, pink beans, milo, millet, sorghums, feterita, kaffir and Sudan grass.

We harvest cowpeas, alfalfa, tomatoes, melons, cucumbers, grapes, figs, plums, peaches, apples and pears.

New Labor Saving Bean Threshers

Seven men can operate the Junior No. 1, equipped with sacking platform for threshing from windrows—the most successful and economical Bean Thresher offered to California growers, threshing every variety.

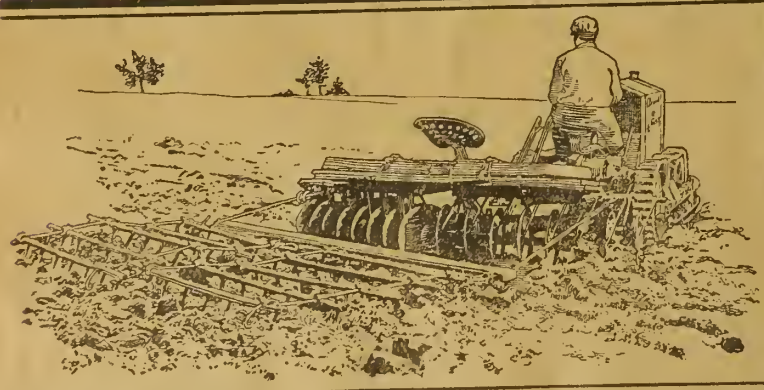


For 22 years we have been making Bean Threshers in Ventura County. Our experience in hundreds of bean fields with the many machines we have built and sold has given us unlimited opportunity to observe and build bean threshers that meet every requirement.

To meet the demand for a bean thresher that could be operated with a minimum of labor, we have produced the Junior Nos. 1 and 2, two sizes of our special models that can be drawn across the field by a small tractor or horse power and operated by gas engine mounted as shown here. This machine can be operated as a stationary machine also. Seven men can operate this machine successfully, thereby SAVING THE EXPENSE OF HAULING THE BEANS TO THE MACHINE. It is built on the same principles as our larger machines and works just as satisfactorily, threshing every variety of beans.

Write us for information about BEAN THRESHING MACHINERY, telling us your acreage, what kind of beans you have, what horsepower engine or tractor you have, what kind of engine and tractor, and the amount per day you would like to thresh and we will furnish you, free, information as to your most economical and satisfactory requirements. Do not waste a valuable bean crop by trying to thresh beans with a machine intended to do other work. It will pay you to investigate our line and to buy without depending upon freight shipments from the East and where parts can be obtained quickly.

The Ventura Manufacturing and Implement Co.
Ventura, Calif.



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Cleveland Tractor
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F. H. Stow Tractor Company
Distributors for No. California and Nevada
Berkeley, California

The Answer to the Farm Labor Shortage

THE farm labor situation is serious. And little relief is in sight. The new draft will take more men. More horses and mules must go. But, in the face of these handicaps *production must be increased*—and it can be if you adopt the right means.

The Cleveland Tractor has shown the way on thousands of farms. It has successfully replaced muscle with machinery. It has proved itself the modern "Man-of-all-Work."

The Cleveland Tractor plows as much ground as *three* good 3-horse teams and three men—eight to ten acres a day.

It actually does the work *better*. And it harrows. It plants. It reaps. It cuts ensilage, fills silos, turns saws, hauls manure spreaders and road machinery, drags logs, and does the hundred and one chores that mechanical power can do about the farm. It delivers 12 horsepower at the drawbar and 20 horsepower at the pulley. But it weighs less than 3200 pounds. The

Cleveland Tractor

travels on its own tracks, like the giant "tanks" on the battlefields of Europe, and will go practically anywhere. With 600 square inches of traction surface constantly on the ground, it goes through mud, sand, clay and gumbo without miring, floundering or packing the soil.

It steers easily—by the power of its own engine,—and will turn in a twelve-foot circle. It is so small that it can readily be operated under and among small fruit trees. It requires less housing space than a horse.

Rollin H. White, the well-known engineer, designed the Cleveland Tractor. It is built under his supervision—from the best materials. Gears and tracks are protected from dirt and mud, and are specially built for long service.

Let this modern "Man-of-all-Work" fill the gaps on *your* farm. Let it help you produce larger crops, with less help—and incidentally make greater profits for you. Write us now for detailed information and the name of the nearest Cleveland dealer.

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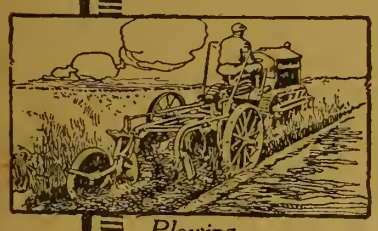
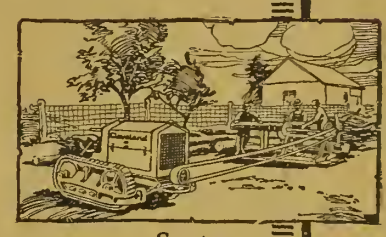
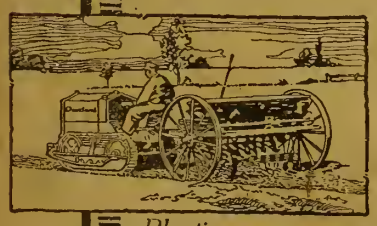
The largest producer of crawler type tractors in the world.

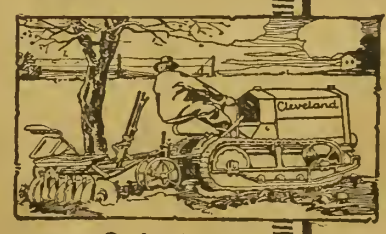

Plowing


Sawing

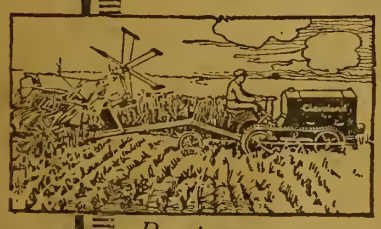
Harrowing

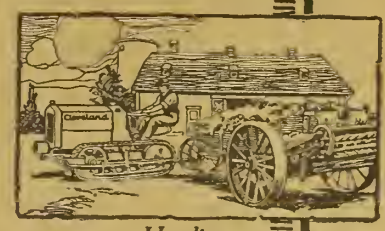
Grading


Planting



Orchard Work


Reaping



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Join the Satisfied Owners

who have purchased sons of our great herd sire

Prince Gelsche Walker Korndyke

Many dairymen have visited our farm and selected young bulls to head their herds, keeping us sold right down to youngsters all the time.

Wouldn't it be a good thing for you to come and see what we have to offer, and find out on what liberal terms we will sell you a splendid young bull?

Remember that these bulls are sure to increase very rapidly in value just as soon as we have official testing of their sisters under way, which will be within the next few months, and it is to your interest and financial advantage to buy now and be in position to benefit through our work.

King Korndyke Pontiac

is shown below. One of his sons sold for $6500 last December, and he is getting a wonderful lot of calves in our herd at present.

JANE GARDEN FARM

SACRAMENTO — CALIF.

FRED W. KIESEL, PROP'R. C.W. YOUNG, SUP'T.

King Korndyke Pontiac 20th

is the only bull in service in California that has for a dam a heifer that made above 36 pounds butter in seven days and above 1100 pounds in one year.

Her wonderful production is no more than might be expected from her breeding, for she is a daughter of Prince Gelsche Walker and De Kol of Valley Mead 2nd, who formerly held the world's record for two years production of butter by a helfer.

The sire of King Korndyke Pontiac 20th is King Korndyke Pontiac, conceded to be the best individual son of King of the Pontiacs in the west, and he is out of a half sister to Prince Gelsche Walker.

Keep your eye on this breeding in our herd as well as others, and make up your mind early to have a son of this great young sire.

At present we have only a few young bulls on hand, sired by Prince Riverside Walker, our senior herd sire. Visit us or write your needs.

Our Entire Herd is Tuberculin Tested

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Creamcup Holsteins Headed by the 33.92 pound bull Creamcup Champion Pontiac Burke. A few young bulls for sale. M. M. HOLDRIDGE, Rt. A, Box 437, San Jose, Cal.

When writing advertisers, mention The Cultivator.

Glenn County Pig Club Contest

Written for California Cultivator By W. H. Heileman

EIGHT boys from the Willows and Orland high schools started in a pig feeding contest some four months ago. The rules of the contest required that each boy feed at least two pigs to market size and that he keep record of all feed and keep track of the cost of feed, labor and other incidentals connected with the production of pork. The contest ran four months, and the pigs at the close of the feeding period ranged from 6 to 7¾ months old.

Seven boys finished. The winner was Ernest Barceloux of Willows. He entered with two Berkshire pigs which averaged 52 pounds each and which were 3¼ months old. After four months' feeding the two pigs averaged 247 pounds each. The daily gain on his pigs was 1.62 pounds each. After figuring out the original cost of the pigs and the feed and labor entailed during the 120 days contest this boy had a net profit of $22.15 or $11.07 per pig.

Below are tables which show some of the facts and results in the contest:

The average age of the pigs at the close of the period was 7¼ months. The average weight at the start was 57 pounds and the average weight at the close was 222 pounds. The gain in weight per pig taking the entire period ranges from 102 pounds to 199 pounds, though each pig was fed the same length of time, namely four months.

In the above table the total cost of feed includes grain, alfalfa meal, concentrates, milk, and sometimes tankage. The total invested includes the cost of pigs on a pork basis when bought, labor, feed, and all that went into the pigs. The final value is what the pigs sold for, which was only the regular market on the date sold. It will be noted that in the profit column Long suffered a loss of $1.28 on his five pigs, or about 26 cents on each pig.

The above records in the main include some pretty careful feeding on the part of the boys. Most of them fed mixtures which included milo, rolled barley, or whole barley, tankage, alfalfa meal, and mill feeds. Nearly all the boys found a plentiful supply of skim milk or buttermilk for their pigs. Long had the least varied rations, his dry feed being largely milo maize and midlings.

For the 21 pigs in the contest the figures show that the average grain fed to each pig was 522 pounds. The average cost of grain fed to each pig was $15.45. The average pounds of grain to each pound of gain in live weight was 3.74. The average cost of making a pound of pork was 12.8 cents. The pigs show an average cost of $27.36 to the time of sale, and sold for an average price of $33.55 each. The average profit on each pig was $6.19.

Barceloux led by making a profit of 407 per cent on his original investment; Ray Shallooe made 33 per cent; Templeton 27.2 per cent; Hawkins

TABLE NO. 1

This table shows the number, age, weights, and gains for each boy's pigs, taken by lots.

Name of feeder	Number of pigs	Age at start, months	Age at close, months	Ave. weight, start, pounds	Ave. weight, close, pounds	Total gain, pounds	Gain per pig, pounds	Gain each per day, pounds
Long	5	3	7	65	167	510	102	.80
Templeton	2	3½	7½	80	196	231	115	.96
Hawkins	4	2	6	58	235	703	176	1.46
Barceloux	2	3¼	7¼	53	247	398	199	1.66
Frost	2	3½	7½	60	220	319	159	1.32
Ed. Shallooe	3	3½	7½	59	206	441	147	1.22
Ray Shallooe	3	3¾	7¾	65	244	537	179	1.50

*Loss

TABLE NO. 2

This table shows the total feed, its value, and the total each boy had invested, taken by lots

Name of feeder	Pounds grain fed	Value of grain	Total cost feed	Total invested	Final value of hogs	Net total profit
Long	3208	$89.64	$89.64	$130.76	$129.58	$ 1.28*
Templeton	684	19.70	25.70	44.21	60.76	16.55
Hawkins	2636	71.08	84.95	120.08	146.01	25.93
Barceloux	1300	39.00	40.85	54.42	76.57	22.15
Frost	960	28.80	43.20	58.91	68.20	9.29
Ed. Shallooe	1640	42.98	60.83	83.07	95.63	13.56
Ray Shallooe	1640	42.98	60.83	85.14	113.30	28.16

*Loss

TABLE No. 3

This table shows the grain and feed, and the cost and final value, on the single pig basis, for each boy's lot, for the four months' period.

Name of feeder	Grain per pig, pounds	Total cost grain per pig	Grain per pound of gain, pounds	Cost per pound of gain	Total cost per pig	Final value each	Profit per pig
Long	642	$17.93	6.30	$0.176	$26.15	$25.91	$00.26*
Templeton	342	9.85	3.00	.111	22.10	30.38	8.27
Hawkins	657	17.77	3.74	.121	30.02	36.50	6.48
Barceloux	650	19.50	3.34	.105	27.21	38.28	11.08
Frost	480	14.40	3.01	.135	29.95	34.10	4.15
Ed. Shallooe	547	14.33	3.72	.138	27.69	31.88	4.19
Ray Shallooe	547	14.33	3.05	.113	28.38	37.77	9.39

*Loss

21.6 per cent; Frost 15.4 per cent; and Ed Shallooe 15.1 per cent. Long lost one per cent on his investment.

On the basis of profit alone Barceloux has first place, Ray Shallooe second, and Templeton third. On the basis of total score which includes values with regard to weight and age, profit on investment, story, and record keeping, Barceloux has first, Ray Shallooe second, and Hawkins third.

It is interesting to note the reports made by the boys in the contest, as related to feeds.

Ernest Barceloux reports feeding 1300 pounds of ground milo which he had ground at Macy's mill in Orland. He hauled his grain from Willows to Orland, had it ground at 15 cents per hundred and returned it for feeding his pigs. His other feed was kitchen slops and waste, of which he reports feeding one and one-half gallons daily. He had grass for a while at first. He pastured his hogs two months, then used the dry lot. One of the Barceloux pigs came from the Anchorage Farm at Orland. This pig was six months old at the close of the contest and weighed 217 pounds. His weight at the start of the contest was 48 pounds.

Ray Shallooe had two pure bred Berkshire pigs, one coming from the Mills Orchard Corporation Farm and the other from the Butte City Ranch. Between January 20 and May 6 Ray fed immature milo (this milo was quite musty due to heating), and between May 6 and 13 he fed 100 pounds of whole barley which he first boiled. He brought his pigs back to the musty milo from May 13 to the close of the contest. He fed a total of 1539 pounds of milo, 100 pounds of boiled barley, and 229 gallons of skim milk during the contest. He used grass and weed pasture a portion of the time.

Merle Hawkins fed four grade Duroc pigs which he bought from his father. He says: "I found a man who had whole barley to sell and I bought it and had it ground and it cost me $2.25 per hundred. I fed six parts of barley, two of mids, and three of alfalfa meal. In the middle of the contest I weighed my pigs and found they had each gained 1½ pounds every day. I fed the same way for a month more when my barley ran out and I bought red milo which I used instead of barley."

Hawkins fed his four pigs 1183 pounds of ground barley, 546 pounds mids, 514 pounds of ground milo, 360 pounds of alfalfa meal, 33 pounds of tankage, five pounds charcoal, four pounds bonemeal, and four pounds of phosphate rock. He fed also 730 gallons buttermilk and 240 gallons skim milk.

Gwen Templeton fed two grade Duroc pigs which he bought from his father. He says in his report: "My hogs had no pasture and hardly any green feed at all. I always tried to keep my pigs so they had plenty of water. I weighed each month. I fed all my grain wet. The grain was not soaked in water but mixed in with the milk at feeding time." Templeton fed his two pigs 48 pounds mids, 55 pounds alfalfa meal, seven pounds barley, 17 pounds tankage, 107 pounds milo, 450 pounds of a mixed feed which cost three cents per pound, 2½ pounds charcoal, and four pounds of phosphate rock. He fed 300 gallons skim milk during the contest.

Ernest Frost fed two pure bred Berkshire pigs from the Mills Orchard Corporation. He says: "I fed my pigs milk first and let them drink all they wanted, then I mixed barley and milk together and gave them." Frost fed 960 pounds whole barley and 708 gallons of skim milk. With this he made 319 pounds of gain in pork.

Charles Long fed five pure bred Berkshire pigs. He states: "The pigs had ground milo in one section of a self-feeder and charcoal in another. They had this before them all the time. I fed them by hand twice a day some, ground milo, middlings, and a little cocoanut meal." Long fed 2370 pounds of milo, 720 pounds of middlings, 85 pounds cocoanut meal, 34 pounds charcoal, 33 pounds of tankage, and eight pounds of bone meal and phosphate rock. He used two pints of cresol to keep the pigs free from lice. He fed no milk or buttermilk.

REPELLENTS FOR PROTECTING ANIMALS

VARIOUS kinds of flies tend to injure cattle by weakening them and reducing their milk supply. It is fairly well established that the stable fly does considerable damage. The test experiments with dairy cows seem to indicate that the effect of flies on milk is not of great economic importance, although evidence seems to show that animals protected from flies feed better and are generally in better condition. Reduction in milk, some authorities believe, is due as much to the fact that cows do not graze as freely in the hot sun in summer as at other seasons.

There are excellent repellents prepared and sold on the market. Some prefer to prepare their own. For such we reprint from a former Cultivator the following:

In general the conclusions are that many of the substances, such as pyrethrum powder, camphor, citronella and sassafras, while temporary repellents, lose their effectiveness very shortly. Ten per cent solutions of the liquids in cottonseed oil, therefore, commonly have to be applied daily.

Various oils, emulsions of oils and mixtures of oils are used in repelling

Dutchland Sir

Pietertje Creamelle

Is a name that is becoming firmly entrenched in the story of high producing Holsteins in California.

By a grandson of the great transmitting cow Changelling, and out of a daughter of the former world's record cow Creamelle Vale, he is bred to great production and has already proven his worth with 18 A. R. O. daughters in our herd, records up to over 30 pounds butter in seven days.

We enjoy a steady sale of good bulls to dairymen, many of them coming back for their second and third bull. We believe we can fill your requirements in the bull line. Write us or visit our farm.

F. STENZEL

San Lorenzo *California*

King Sadie Vale Rose

son of King Korndyke Sadie Vale and a 27.98 pound daughter of a 32.41 pound dam is at the head of the carefully selected

Tagus Holsteins

His first calves are splendid youngsters and you can find exceptional values in his young sons out of some of our best cows. Visit the herd or write for prices.

Pacific States Corp.

Tulare, Cal.

H. C MERRITT, Jr., Manager

HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee.
Careful attention given to mail orders.

Whittier State School

WHITTIER, CALIFORNIA

HOLSTEIN-FRIESIAN CATTLE

From my herd of 75 registered Holsteins, can spare ten yearling heifers and heifer calves splendidly bred, closely related to 30 and 40 pound cows.

One bull calf, whose eight tested nearest dams averaged 31 pounds weekly butter record.

One service bull from 29 pound dam. One hundred and two pounds milk one day. His two nearest dams through sire yearly record average 21,000 pounds milk and 812 pounds butter.

Write me for low prices and further information.

Frank Reed Sanders, Mesa, Ariz.

Come to Stanislaus County for Registered Holsteins

STANISLAUS COUNTY LEADS

All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

Pelandale Holsteins
Headed by Hazelwood Mercedes Posch Ormsby. Good young bulls and a few registered cows for sale.
J. A. Pelanda, Rt. B, Modesto, Cal.

HOLMES STOCK FARM
Registered Holsteins of best breeding. Young bulls for sale.
R. L. Holmes Modesto, Cal.

Segis Pontiac De Kol Dutch
Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. E. E. Freeman, Rt. B, Modesto

White House Holsteins
A well bred proven herd sire for sale. also a few bull calves.
A. M. Bibens, Rt. 1, Box 307, Modesto, Cal.

Registered Holsteins
Young sons of Prince Hlske Walker out of A. R. O. dams for sale.
H. E. Cornwell, Rt. B, Box 183, Modesto, Cal.

Thompson's Registered Holsteins
Young bull calves for sale with yearly record backing.
Luther Thompson, Rt. A, Box 351, Modesto Cal.

Our Senior Herd Sire is KING KORNDYKE HENGERVELD ORMSBY 7th
Five of his sisters sold at public auction for $23,800, an average of $4760.
This blood has made some of the world's greatest producers.
Our junior herd sire is TOYON KING KORNDYKE SOLDENE, son of a 33.23 pound daughter of King Hengerveld Aaggie Fayne.
Young bulls for sale. No females.
REGISTERED BERKSHIRE BOARS, sons of the $1500 boar Star Leader, for sale.
Kounias Registered Stock Farms, Modesto, Cal.

Santa Anita Rancho

Anoakia Breeding Farm

Registered Holsteins

Depth of body is a prime requisite in the high producing dairy cow, and is especially desirable when found in combination with other outward evidences of dairy quality. Great deep bodies are outstandingly characteristic in the offspring of

Merci Lad Korndyke Burke

our senior herd sire, who is by De Kol Hengerveld Burke and out of Winnie Korndyke Cornucopia De Kol, 31,034.1 pounds milk and 1201.00 pounds butter in one year. the first cow in California to produce that amount of butter in one year.
We have a few of his sons. out of good record dams, for sale.
Inquiries or orders by mail will receive careful and prompt attention.

SANTA ANITA RANCHO *Santa Anita, Cal.*
Anita M. Baldwin, Owner *W. H. Taylor Supt.*

Sons of Prince Alcartra Korndyke

are giving uniform satisfaction in a large number of herds whose owners were farsighted enough to secure a son of this great son of Tilly Alcartra and Korndyke Queen De Kol's Prince.

How about YOUR herd? Wouldn't a son of Prince Alcartra Korndyke work an improvement for you?

Korndyke Queen De Kol's Prince, sire of Prince Alcartra Korndyke, is famous not only because of his great list of 90 A. R. O. daughters and 21 proven sons, but also because of the great size and splendid type that are characteristic of his descendants through both sons and daughters.

Tilly Alcartra, dam of Prince Alcartra Korndyke, is without question the greatest dairy cow ever developed in any breed. She is the only cow on the Pacific Coast to make 40 pounds butter in seven days and she did it after five consecutive years of yearly test work. She is now making the best yearly record of her career, exceeding during her first five months her former world's record production.

The J. S. Gibson Co.

Williams California

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Clean and Clear as Water

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For Milking Machines

B-K keeps rubber tubes and teat cups sweet and clean. It penetrates milk solids and makes milker parts easier to clean—kills the bacteria that spoil the milk.
B-K leaves no taint or taste of itself — makes rubber parts last longer — does not injure metal—is the cheapest in actual use. Sold under absolute guarantee.

Recommended by all Milking Machine Manufacturers

B-K has been used by thousands of milking machine owners including certified milk producers with complete satisfaction for over six years. It is the original purifier.
Get B-K today—end cleaning troubles and sour milk losses. If your dealer does not have B-K send us his name with your order. We have a dealer near you.

Send for information— "trial otter"— and dairy farm bulletins.

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Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY
IT MAKES THEM FAT

Hauser Packing Co. Los Angeles

Buy Your Next Herd Sire at

Hollywood

We offer two exceptional values at the present time in young bulls.

No. 1—Born February 15, 1918

Sire—KING KORNDYKE SADIE VALE, the only 40 pound bull that has a 40 pound daughter.

Dam—S. V. H. ALTOANA ORMSBY, a daughter of Sir Veeman Hengerveld. She made 16.70 pounds butter in seven days as a three year old right after being unloaded from the cars from the east and is capable of a much larger record.
This young fellow is a splendid individual, three-quarters white, and is a splendid buy at the PRICE $500.00.

No. 2—Born May 9, 1918

Sire—HOLLYWOOD PIETERTJE KORNDYKE, who is by Hollywood Lilith Palmyra, 11 A. R. O. daughters including a 33.44 pound three year old, and out of Pietertje Korndyke Abbekerk, 712.9 pounds milk and 35.30 pounds butter in seven days, 3235.8 pounds milk and 141.6 pounds butter in 30 days, 9300 pounds milk and 375.0 pounds butter in 90 days. As a senior four year old she made 23,874.2 pounds milk and 984.83 pounds butter in one year, and she is a granddaughter of Pontiac Korndyke.

Dam—PIETERTJE HENGERVELD CREAMELLE, 621.5 pounds milk and 30.24 pounds butter in seven days, 2648.7 pounds milk and 124.18 pounds butter in 30 days, 16,633.8 pounds milk and 691.56 pounds butter in 305 days.
The dam and sire's dam of this calf average:

Milk seven days	667.10
Butter seven days	32.77
Milk 30 days	2,942.20
Butter 30 days	132.89
Milk one year	20,254.00
Butter	838.19

(Average of yearly records includes the 305-day record of his dam and the four year old record of his sire's dam.)

This choice young fellow is about two-thirds black, and his breeding on both sides is unexcelled. We recommend this buy as a sure money maker. He will not be here long at the price, $500.

Hollywood Farm

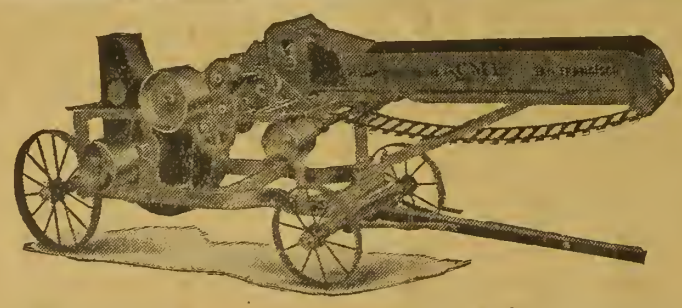
(The Home of Judge Segis)

F. S. Stimson, Owner **Hollywood, Wash.**

FILLS THE SILO

MAKES ALFALFA MEAL

CUTS DRY FEED



The ACME Cutter

The same Acme Cutter that fills your silo can be used to your profit at all seasons of the year in CUTTING DRY FEED and MAKING ALFALFA MEAL.

Cut Your Dry Feed

10 to 20 per cent of all bulk hay fed to stock is WASTED—trampled under foot or nosed out and not eaten. With alfalfa hay at $20.00 a ton you can save $4.00 on every ton of alfalfa you feed this year by running it through an Acme Cutter.

The Light Running Acme is an ALL-STEEL frame machine. Built in SEVEN SIZES. Catalog and sample of meal on request.

De Laval Dairy Supply Co.

Ideal Green Feed Silos **Alpha Engines**

61 Beale Street, San Francisco, Cal.

Better service is assured by the advertiser if when writing you mention the California Cultivator.

flies. Crude petroleum, cottonseed oil, fish or train oil, and light coal-tar oil may be used pure.

Jensen (1909) recommends the followiug formula, which is said to protect cows for a week: Common laundry soap, one pound; water, four gallons; crude petroleum, one gallon; powdered naphthalin, four ounces.

Cut the soap into thin shavings and dissolve in water by the aid of heat; dissolve the naphthalin in the crude oil; mix the two solutions, put them into an old dasher churn and mix thoroughly for fifteen minutes. The mixture should be applied once or twice a week with a brush. It must be stirred well before being used.

Fish oil is rated as one of the best repellents and has been used alone and in combination with various other substances. Other substances that have repellent qualities and that have been used in various mixtures are pine tar, oil of tar, crude carbolic acid, oil of pennyroyal and kerosene. The protective action of fish oil is stated to range from less than two days to six days. Moore's formula is said to protect for two days. This mixture is safe when applied lightly with a brush, but not when applied liberally with a pail spray pump. The formula is as follows: Fish oil, 100 parts; oil of tar, 50 parts; crude carbolic acid, one part.

Laurel oil is a very effective repellent. Mayer found that the protection lasted from two to twelve days. The oil when used pure has an irritating effect unless it is applied lightly. According to Mayer, the irritating effect may be overcome by combining it with linseed oil in the proportion of one to teu. In the experiments of the department of agriculture it was found that teu per cent of laurel oil in cottonseed oil was active for less than a day.

A number of formulas for repellents for application to wounds have been recommended by various authors.

In experimental tests carried out by the department the following results were obtained:

A ten per cent mixture of crude carbolic acid (21.8 per cent phenols) in cottonseed oil has a very strong repellent action on flies, but this lasts less than a day, in consequence of which it is necessary to apply the mixture every day. The mixture should be applied lightly with a brush, since a heavy application with a spray pump is likely to cause phenol poisoning.

Mixtures consisting of 10, 20 and 50 per cent of pine tar in cottonseed oil have marked repellent qualities. They should be applied lightly and it is necessary to apply them every day. A liberal application of a ten per cent mixture is deleterious to animals.

MORE AYRSHIRES

A carload of pure bred Ayrshires has just been received from Pennsylvania breeders at Elkhorn Farm in Monterey County. Elkhorn Farm is

Mother and Offspring

Finlayston's Annie Laurie. Record as a three year old 9850 pounds milk, 460 pounds butter, test four per cent.

Annie Laurie's Baron of Elkhorn. Sire, Baron's Best of Bargenoch; dam, Finlayston's Annie Laurie; sire of dam, Imported Finlayston. Dam's record as a three year old 9850 pounds milk, 460 pounds butter, test four per cent.

Our Country Needs Livestock and Poultry

Kreso Dip No. 1

for

FARM SANITATION

will keep Livestock and Poultry healthy.

KRESO DIP NO. 1

EASY TO USE.
EFFICIENT. ECONOMICAL.

Kills Sheep Ticks, Lice and Mites; Helps Heal Cuts, Scratches and Common Skin Diseases.

PREVENTS HOG CHOLERA.

WRITE FOR FREE BOOKLETS ON POULTRY AND LIVESTOCK.

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SAVE $12.00 A HOG

SEND for the "Fact Book". Tells how to raise premium quality milk-fed pork for 11 cents a pound. Talks common sense, proven facts, not theories. Packed with information, which you can turn into profit. Get your free copy today.

GROWING PIG FEED — A1 — FATTENING HOG FEED

More Hog for Less Money, and Quicker

FOR POULTRY—Globe A-1 Buttermilk mash will put your flock in glowing health, stop chicken funerals, produce more eggs. Sample and folder sent free.

GLOBE MILLS

905 E. 3rd St., Los Angeles, Cal.

The DRY BUTTERMILK DOES IT

SAFETY

We believe our conditions of sale are as definite and favorable to the buyer as it is possible to make conditions covering anything as variable and flexible as living animals.

Safe sales are good for the buyer and best for the seller in the long run.

We accept high class registered animals in our consignment sales, or will sell your whole herd. Write us.

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Brighton Farm Herds

Registered Shorthorns

and

Berkshires—Both Sexes

H. L. & E. H. Murphy

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YOU CAN'T CUT OUT

A BOG SPAVIN, PUFF OR THOROUGH-PIN, BUT

ABSORBINE

TRADE MARK REG. U.S. PAT. OFF.

will clean them off permanently, and you work the horse same time. Does not blister or remove the hair. $2.50 per bottle, delivered. Will tell you more if you write. Book 4 R Free.

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AYRSHIRES

REGISTERED

Herd Sire, Dairy King of Arizona

CHOICE BREEDING STOCK FOR SALE

A. MACMINN

Phoenix ***Ariz.***

owned by J. H. Meyer who has been for some months maintaining a small herd on his Monterey County ranch. Most of these recently received animals have been sired by one of the greatest of the Ayrshire breed, Finlayston, a bull which has to his credit 90 A. R. records; others were sired by Baron's Best of Bargenoch, who has 11 A. R. daughters to his credit, each averaging over 10,000 pounds of milk testing over four per cent. Some of the new purchases were direct importations from Scotland.

If we sell our cows this year we will be confronted with the hardest kind of a task when we want to replace them. Good cows have been scarce for a number of years. I believe that we have not reached the highest point when it comes to prices to be paid for good dairy cattle. Rather than sell our cows we can afford to buy feed even at a temporary loss. The situation is full of hope and promise to those who are willing to learn the lesson which the present crisis teaches.—Hoard's Dairyman.

In the Northwest a large number of herds of registered dairy cattle are now under federal test and supervision for tuberculosis. One or two of the big breeders, notably Hollywood Farm and Carnation Stock Farm, took the initiative in this matter

Field Notes from the Live Stock Men

Ormsby Segis Marie, the great world's record heifer, and the other bunch of choice registered Holstein females purchased by Toyon Farm Association, San Jose, at J. H. Hulbert's sale at Mount Vernon, Washington, arrived at Toyon Farm in first class condition. They were brought down by Charles Mac Donald, under whose care Marie made her world's record, and who has now taken charge of the Toyon herd. All of the females except one are due to freshen between July and November, and there may be expected some good records from these show quality females.

Carnation King Sylvia

This is the $106,000 registered bull calf brought to the Pacific Coast by the Carnation people.

K. P. Tola Joe, Gotshall & Magruder's state record daughter of King of the Pontiacs, is now at Tulare Holstein Farm where she will be bred to W. J. Higdon's $6500 bull King Korndyke Pontiac 20th. The calf from this mating will be worth a small fortune, bull or heifer.

Present labor conditions are trying the souls of dairymen who operate on a scale that requires the employment of a number of men, but at no time in our history have conditions in the dairy business and in the breeding of registered dairy cattle been so favorable for the owner who does his own work, possibly with the aid of other members of the family. Investment in registered dairy cattle right now to the limit of carrying capacity looks like as wise a one as can be made, for when the certain scramble for cattle comes a little later on the man who owns good cattle will be able to sell them for well advanced prices.

The Lewis Company reports a sale from its Hollister herd of registered Holsteins to F. M. (Borax) Smith for the herd maintained on Sorosis Farm, Santa Clara County. The bull, Prince Ambro Skylark Ormsby, is an excellent young son of Sir Skylard Ormsby Hengerveld, whose daughters have made a remarkable showing. Mr. Abernathy, who handles the extensive operations of Sorosis Farm, is an enthusiastic Holstein man and is gradually breeding up an excellent herd.

Toyon Farm Association of San Jose reports the sale to Bohnett Brothers of Santa Clara County, of a high class bull calf sired by their herd sire, Finderne Soldene Valdessa and out of Tulista Johanna Princess, a three year old of great quality, with a record of 27.91 pounds for seven days, 98.60 pounds of milk in one day and over 100 pounds of butter for 30 days. Bohnett Brothers have been successful dairy men for many years and have been known as scientific farmers in all different departments. They are just starting their first official testing work with pure breds. The good foundation cow Nordica Queen, with a present record in excess of 25 pounds, is now on test and looks promising for an increased record.

Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 126982, Grand Champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Bldg., San Francisco
Carruthers Farms, Mayfield, Cal.

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Gilts Bred to Cherry Volunteer 2nd
for August Farrow For Sale

Prize Winning Berkshires
Two High Class Jr. Boars, choice $65.00. Six Fall Boars, choice $50.00.
Sired by Ames Rival.
F. P. Hall **Perris, Cal.**

This is a 750-pound Latest Style
DE LAVAL
CREAM SEPARATOR
Acknowledged by cow owners the world over to be the closest skimming, the easiest running and the longest wearing separator

360 pounds of butter would have been needed to buy this machine in 1914.
255 pounds of butter will buy it now.
96 bushels of wheat would have been needed to buy this machine in 1914.
55 bushels of wheat will buy it now.
139 bushels of corn would have been needed to buy this machine in 1914.
87 bushels of corn will buy it now.

There never has been a time when you needed a De Laval so much. There never was a time when you could so well afford to buy it. Don't waste food and money and time trying to get along without a cream separator, or with a half-worn-out or inferior machine. Order your De Laval NOW when you need it most.

Why not see the nearest De Laval agent at once? If you do not know him write to the nearest office for new catalog or any desired information.

De Laval Dairy Supply Co.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST. Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Acme Ensilage Cutters and Blowers, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Catalogs of any of our lines mailed upon request.

61 Beale Street, San Francisco

A. W. MORRIS & SONS' SALE
POSTPONED

Watch for Announcement of this Sale which will be held this Fall.
California Breeders Sales and Pedigree Co.
SACRAMENTO, CAL.

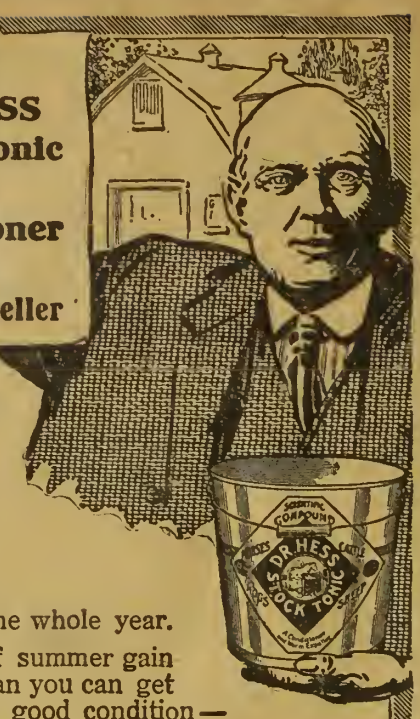
LONE STAR HEREFORDS
Registered Herd **Unregistered Herds**
800 Cows and 50 Bulls Best of Breeding Show Winners
4000 Head Both Sexes Same Breeding as Registered Herd
All stock guaranteed as represented. Write for terms and particulars. We offer for immediate delivery, 200 two year old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.
Scharbaur & Eidson, Midland, Texas
Elevation 3000 Feet

My Stock Tonic is never peddled.

25-lb. Pail, $2.25; 100-lb. Drum, $7.00.

Why Pay the Peddler Twice My Price?

Dr. HESS Stock Tonic is a Conditioner and Worm Expeller



Keep Your Animals in Condition

Now is when your stock need special attention because the change from pasture to dry feed is one of the most critical periods of the whole year.

You can lose more pounds of summer gain through November neglect than you can get back all winter. Keep up the good condition—keep up the summer thrift—keep out the worms.

Dr. Hess Stock Tonic

Drives Out the Worms. Makes Stock Healthy

Keep the animals' systems right and you need have little fear of disease. Stock Tonic tones the stomach and the digestive organs, gives better action to the bowels, improves the blood, purges of worms, and gives real life and vigor. The *Nux Vomica* in it aids digestion. *Quassia* is a true tonic and a worm expeller. The *Sulphate of Iron* is a blood builder and worm expeller. There is *Epsom Salts* for a laxative, and *Nitrate of Potash* to act on the kidneys.

Why Pay the Peddler Twice My Price?

You buy Dr. Hess Stock Tonic at an honest price from a responsible dealer in your town.

25-lb. Pail, $2.25; 100-lb. Drum, $7.00

Smaller packages in proportion

Dr. Hess & Clark, Ashland, Ohio

Dr. Hess Poultry Pan-a-ce-a
Will Start Your Pullets and Moulted Hens to Laying

Dr. Hess Instant Louse Killer Kills Lice

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Clean and Clear as Water

Awarded Gold Medal Pan.-Pac. Expo.

For Calf Scours

B-K treatment is saving many calves. Scouring calves indicate a germ infection that is likely to run through your entire herd with serious losses.

The loss of one calf is bad enough, but nothing compared to your loss when the infection spreads—as it will unless checked. Then your year's work in building up your herd is wasted—your profits lost.

Leading breeders testify that B-K stops scours. It is powerful in killing germs. When used internally B-K kills the germs in the mouth, throat and digestive tract, heals inflamed membranes, relieves irritation. B-K may be given freely in drinking water.

If your dealer does not have B-K, send us his name.

FREE BULLETINS: Send for complete information—"Special trial offer" and our calf bulletin No. 136.

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Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, $2145 cash awards. Write to

M. Bassett

Hanford, Kings County, Cal.

HEREFORDS

A large herd of selected stock to choose from.
Everything sold is guaranteed as represented.
Why send East for breeding stock when we can supply your needs. Save time and money by writing us for particulars.

Cottrell & Packard, Tempe, Arizona
Members Pacific Coast Hereford Breeders Association

Northern California Notes

Written for California Cultivator By W. S. Guilford

CONDITIONS IN GENERAL

GRAIN harvest is well under way in the Sacramento Valley and the crop is very spotted, both as to quality and yield. There is considerable speculation as to price; a few lots have changed hands at around $2.25 per hundred for barley but most producers are of the opinion that the price will be higher and that they will hold until fall if necessary before selling.

During the early part of June we have had some very hot weather. This has been good for the rice and very favorable for the spread of red spider. This pest has already defoliated some trees, and at the rate it is multiplying it looks as if it would be difficult to keep it in check even where spraying was started early. At Butte City Ranch, at the Monroeville Orchard and at the Moody and Burton Orchard dry sulphur was sprinkled in the crotches of the prune trees and on the ground before any spider could be found on the trees. This was followed by a thorough spraying with atomic sulphur early in June as soon as the hot weather started and as soon as there was any sign of spider. This first spraying is being followed immediately by a second, and spraying will undoubtedly be a continuous operation all summer.

MORE IRRIGATION NEEDED

The need of more irrigation facilities, more storage particularly, is becoming more apparent as the season advances, and it will be more acute later. If this results in definite action in irrigation development it will be a benefit to the valley in the end.

A GREAT SHORTHORN HERD

A prominent Eastern breeder of Shorthorn cattle, Charles Saunders, has said: "No man ever bred good Shorthorn cattle, fed them well, and stayed with it in good times and bad, without making money."

This occurred to me on a recent visit to the Roselawn herd at Woodland. Tom Gibson's father started this herd of Shorthorns nearly 40 years ago. Dr. Elberg, the son-in-law representing the third generation, is a Shorthorn enthusiast and is constantly increasing the high standard of the herd. The cattle are kept in fine condition, the young animals grown out well, and the demand has been greater than could be supplied.

The cattle in this herd are a wonderfully thick meated lot, deep bodied, long and broad. Their business is to convert forage into high class meat, and they do this very efficiently.

Bulls from this herd have been factors in raising the standard of California range herds for many years, and the establishment is now a greater asset to California agriculture than ever. Every bull sold from this herd is a factor for increasing the wealth of the state.

We need a great many more herds of cattle in California like this at Roselawn.

MAKE SILO PLANS NOW

Although the price of building material is higher now than ever before this is the year when more new silos should be built than ever. We need to conserve every pound of feed for live stock in the best possible condition.

Don't delay buying or building the silo until too late in the fall. Get it finished in plenty of time before filling time.

Silos are no longer an experiment; that stage was passed years ago. It is possible to see almost any type of silo in nearly every county or community in the state. It will pay well to visit farms on which silos have been used one or more years, and get the ideas of those who have had actual experience.

GIVE YOUNG TREES PLENTY OF WATER

Many of the young trees planted this year will die for lack of water. Where plenty of irrigation water is available from streams or wells young trees will of course be all right, but on "dry land" plantings the moisture supply is short. Even where cultivation has been thorough additional water should be supplied. In most places it will be a good plan to keep the tank wagon running all summer.

Gerben Abbekerk Maid

Property of Stalder Brothers. At four years, ten months, 11 days produced in seven days 622.0 pounds milk, 30.101 butter. Thirty day record, five years, ten months, eight days, 3190.7 milk, 106.297 butter; at seven years, 15 days, 3037.5 milk, 138.316 butter.

TRUCKS MULTIPLY

A large tonnage of the grain and rice produced in the Sacramento Valley this year will be hauled by trucks and trailers. Because of their greater capacity and the speed with which crops can be hauled in this way they are hard competition for mule teams. Many farmers would be as much at a loss to do business now without tractors and trucks as they would without telephones.

PRODUCE CLEAN MILK

The man who produces unclean and filthy milk is especially unpatriotic. This milk, if sold for ready consumption, causes disease; if used for butter making it produces an inferior grade of butter; and if used for cheese making in all probability will produce cheese that will not keep.

While it is not possible for all farmers to produce a grade of milk similar to certified milk it is possible by a reasonable amount of care for all farmers to produce a high grade of milk.

The following are a few precautions that should be noted by every conscientious dairyman:

Cleanse milk pails and milking apparatus thoroughly after each milking.

Brush off cow before milking.

Milk with clean hands.

Do not allow any dust in barn during milking.

Remove milk from barn as soon as possible after milking.

Keep milk in a clean cool place.

Do not allow manure to collect around the barn door and in the corral.

Keep barn reasonably clean.

Do not sell milk from cows that have not been tested for tuberculosis.

W. E. Spangler, Colorado Agricultural College.

LEGHORN BREEDERS TO FORM ASSOCIATION

Written for California Cultivator By Cornele G. Ross

The Leghorn breeders of California are asked to meet at the Times Assembly rooms, Los Angeles, on Friday evening, July 12, at 8 p. m. to complete the formation of a state wide organization of all who are interested in this breed.

The aim of those who have started this movement is to bring together all who are interested in the Leghorn breed into a body that shall be representative of the most numerous breed in the state and to harmonize any apparent divergence in interests between the socalled "fanciers" and the owners of commercial flocks so that all may work for the improvement of the breed both as to standard of type and increased production of eggs.

We should get together for mutual interchange of ideas that will benefit the industry, institute and carry to a successful conclusion a campaign of education to demonstrate to our members, as well as the consuming public, that the lowly hen, (the Leghorn especially) can utilize by-products unfit for human food and turn out a product of the very highest nutritive value to expand our diminishing food supply.

We must educate the poultrymen to the necessity of improving his average egg yield and also show to the consuming public that the egg is still an economical food, even at the slightly advanced price which present feed costs make necessary.

Now, Poultrymen, it is up to you to turn out and see that this new body is properly launched, that it is officered by poultrymen covering the several poultry sections of our state, as well as representing all branches of the industry. Don't leave it to "the other fellow" this time but come yourself and give the added enthusiasm of your presence as well as the benefit of your knowledge and ideas.

POULTRY PRODUCERS WANTS MEMBERS

The report of the Poultry Producers, Inc., as of June 1, is interesting in a number of particulars, and especially in the hint at the conclusion of the letter of the manager, J. H. Barber, and the president, P. R. Lyding, that "there is a growing sentiment among our membership in favor of issuing such an ultimatum—that the outsiders must either come in and help the association or the association will quit—and it is not impossible that the choice may be offered to the outsiders and defaulting members sooner than they anticipate."

According to the report, it had been figured when the association was organized that it would have at least half of the egg shipments to San Francisco and would soon have enough to control that market. The results have not been as good as were anticipated in the matter of getting these shipments. Last month the association had about 37 per cent of the eggs which came to this market, and last year about 30 per cent. The increase corresponds quite closely to the increase in membership, but does not bring the percentage of eggs up to what was hoped for.

AMERICAN EGG LAYING CONTEST

By R. F. Palmer, Director, Leavenworth, Kansas

Broodiness affected the records of some individuals during May. A pen of white Leghorns from Washington broke our monthly record by laying a total of 144 eggs. White Leghorns, Black Leghorns, Anconas and Rhode Island Reds were the leaders in the order named in the breeders' contest for May. The record being made by the yearling hens is really surprising. These birds all made good records last year, but in spite of that fact the five highest pens of yearling hens laid from 133 to 138 eggs per pen for May. A number of hens made a perfect score of 31 eggs in the 31 days, and a few of the hens which have been among the high layers went broody and their lead is being cut down because of that fact. The Buff Leghorn pullets have made the highest average per bird for the seven months.

Picking the Slacker Hen

Written for California Cultivator By Jean A. Koethen

ALL yearling hens may be divided into three classes: Those that are vigorous and prolific enough to be fit for breeders; those that have proven themselves good layers but are deficient in size, color or some other quality demanded in breeders; those that are profitable neither as breeders nor layers. It sometimes happens that the best breeder in the pen is not the best layer. Undersized hens are often exceptional layers, but they should not be used in the breeding pen. The hen chosen as a breeder should be the best all-round hen, of good size for her breed, a good layer, as near standard qualifications in color and shape as possible, but above all things a vigorous bird. A hen that has suffered some illness and recovered may be a good layer for another year or more, but she must never be allowed in the breeding pen, for there is no certainty that her constitution has not been impaired by that one attack of indigestion or roup.

Our aim in culling the flock in the summer and fall is to segregate the hens into these three classes, and especially to get rid of the slackers, those that are keeping down the average of the flock and consuming grain they cannot pay for. June is not too early to begin to cull out the hens that are dropping off in production. The trapnest picks them with absolute certainty, but a good deal may be learned by observation. Notice the comb for one thing. As long as a hen carries a bright red comb she is laying. When the comb become shrunken and dull in color this may be taken as a sign that for the time being, at least, she has stopped. If this happens in June or July she may be spotted as an early molter and removed from the flock.

Some successful poultrymen still insist that the early molter may be pushed through the molt by careful feeding and made to produce well in the fall, but the concensus of opinion is that she is unprofitable. The color test which is in use at experiment stations is nothing more nor less than a molting test. The hen that has bright yellow legs and glossy plumage in the fall is the early molter. The late molter keeps right on laying while her sister molts and may still be ragged and faded as late at Thanksgiving.

But there are other ways of picking the slacker. She is the hen that hunts the roost while the others are still scratching; the one that dawdles in a corner at mealtime, and usually the one you will find on the roost with an empty crop. This last is a very good test, indeed. The prolific hen must be a large eater. If a hen, after being given the opportunity to fill her crop, still goes to roost with it empty something is wrong. Whether she is lacking in vigor or just simply lazy does not much matter. She is a slack-

Continued on Page 23

The Eggs You Didn't Get

How can you expect a hen to lay 150 eggs a year or even 50 eggs if her vitality is sapped by lice and mites—all she can do is itch and fret and cost you money.

DEVIL'S DUST

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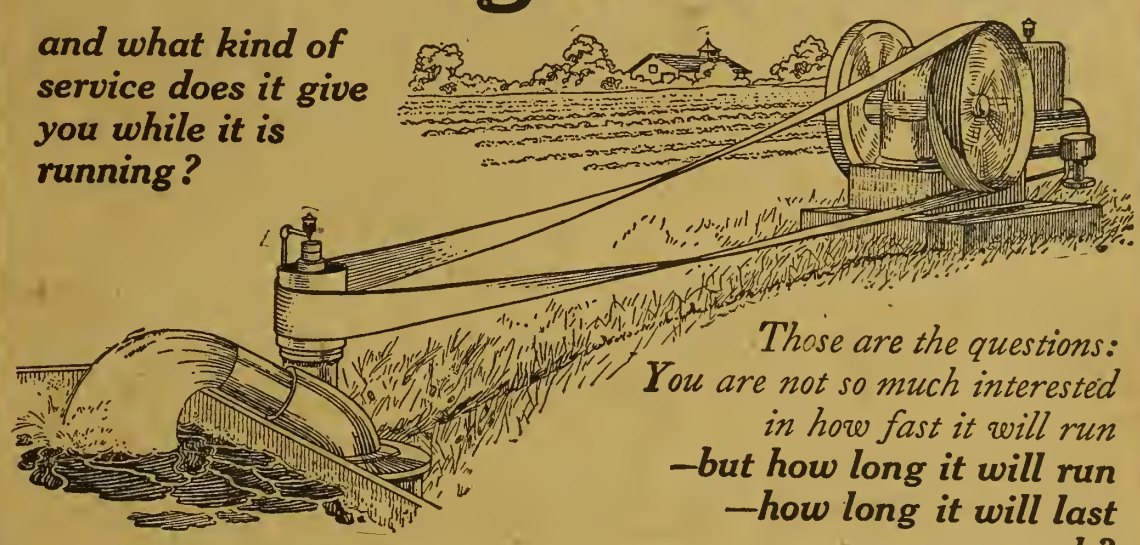

Those are the questions: You are not so much interested in how fast it will run —but how long it will run —how long it will last on your work?

—Test Special Belts

—last and *run* and do their work well for years—it depends on the kind of work. Some belt users buy cheap belts made of short fibre cotton and shoddy rubber — *consequence:* ***they last a few months—maybe not a whole season.***

You can't throw money away faster than to buy that kind of a belt—besides, when it fails to do your work the need may be greatest. Buy a **Test Special** belt in the first place—***it lasts for years. Write us.***

BELT TROUBLES: Do you have any troubles with belts? We are belt engineers. Send us a rough drawing to indicate *how your belt is operated, and tell us your troubles. We'll cheerfully help you solve them—FREE.*

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For Sale to Nurserymen or Large Planters—Owner of a large block of very fine Eureka Lemon trees will sacrifice at a ridiculously low price to those who will take a large quantity. These are not old dirty culled over stock, but strictly first class trees, clean, thrifty and straight, budded high on sour stock, never have been frosted or stunted in any way. Ground has to be vacated by July 1, so this stock will actually be sold at LESS THAN SEEDLINGS CAN BE RAISED. Address X, California Cultivator.

For Sale — Extra fine Valencia trees, ⅝ to 1⅛, all sour root, high buds, very thrifty, clean and straight, not fertilized, excellent soil for balling, nothing better grown. Can supply a limited acreage yet closing out entire lot of these fine trees. S. R. Coate, 564 S. Los Angeles St., Anaheim, California. Phone, Anaheim Pacific 403-J.

Valencia Oranges and Eureka Lemon trees one year past, ¾ to 1 inch. Pedigreed stock on sour root, high buds. We will bud 6000 choice seedlings to your order. Seed bed stock for sale. Randall Bros. Nurseries, Whittier, Cal.

For Sale — Choice, young, thrifty Citrus Trees. W. W. Burns, 631 Security Bldg., Los Angeles.

Citrus Trees — All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park, California.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

SEEDS AND PLANTS

Bean Seed For Sale—We have good seed beans on hand of following varieties: Limas, blackeyes, large white, small white, pinks, Teparys, Henderson bush, Mammoth bush. Now selling bean bags for fall delivery. C. C. Collins Company, Santa Ana, California. Sunset 71; Home 172.

Early Amber Sorghum makes the best silage and produces the greatest tonnage per acre. Recleaned seed 9c per pound f. o. b. Stockton. Fancy recleaned Sudan seed at 18c per pound f. o. b. Stockton, in lots to suit. Aurora Seed Mill, 48 N. Aurora St., Stockton, California.

Sudan Seed 17½c, Amber Cane 7½c, Feterita, Egyptian Wheat, Red and White Milo Maize. Hickory King Corn extra good. Dwarf White Milo Maize yields 21 sacks per acre. S. Peruvian Alfalfa. Box 501, Fowler, California.

Corn, Sorghum, Sudan Grass, Mangel beets and all other kinds of seeds. Immediate delivery. C. C. Morse & Co., 727 Front street, San Francisco.

Sudan Grass Seed, first quality. 17½c per pound. Wm. Ritchie, Arlington, California.

FARM LANDS FOR SALE

Attention Land Buyers!

Here's an excellent proposition: 40 acre farms selling for $15 to $25 per acre, long time payments, 6 per cent interest, in the best agricultural part of Snohomish County, where you have all the modern conveniences, paved roads, railways, schools, churches, mills and factories. This district has proven its worth by the many successful farmers now located there. We also have some beautiful water front 10 acre tracts. OPPORTUNITY knocks at every man's door ONCE, but believe me, it does not continue to knock forever nor does it pound the door down. For further information address the owners, BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

For Sale—Reader, here is a fine paying ranch. 20 acres, fine stand alfalfa and 5 acres 12 year old Navels and Valencias, a row of lemons, about 2 acres around the alfalfa on county property. All alfalfa sold in field at $20 per Hay Scales and binder cutting now. See it. Have 50 head Poland-China hogs. Will sell also if desired. J. Frank Bowen, 712 Grant Bldg., Los Angeles.

Retail Dairy with modern equipment. 30 select cows, fine 20 acre ranch, beautiful 11 room house, barns, silos, pumping plant and many other things to go with the ranch. ½ mile from high and grammar school. Los Angeles suburb. Address V, Care Cultivator.

20 acres deep silt land, joining good town on the South; 10 a alfalfa, 10 a grain; 300 feet to railroad station. Plenty of water for irrigating. Soft water piped on place. Price right. Chas. McNeely, Alpaugh, California.

Attention—Poultrymen — Modern (stocked) plant, small orchard, bungalow home; all conveniences. Big income producer. $1500 will handle. Will bear investigation, write for particulars. George Ellison, Campbell, California.

Be Patriotic. Raise Stock on productive government land, plainly marked on county sectional maps. $2.50 ANY county. Booklet, particulars for stamps. Write Joseph Clark, Sacramento.

LUMBER

Lumber-Sash-Doors-Plumbing - Supplies —Building materials of all kinds. New and second hand *A*R.W. shingles 60c per bundle. Send list for estimates. Dan P. (Mission Street) Dolan, 1620-1650 Mission street, San Francisco.

AGRICULTURAL IMPLEMENTS

IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches.
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Why Buy New Machinery
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New you buy will look like these in short time, but not necessarily worn out. 50 windmills 8, 10, 12 and 16-ft. sizes. Why fight engines? (If you want to fight get paid for it.) Otherwise buy windmills. 16-ft. mills do 6-H. P. work, 20-mile wind. Cost nothing once installed.
Redwood Tanks, Iron Tanks.
Most all sizes. Some less than half price; 900 gal. riveted steel wagon tank, $68.

NEW GALV. TANKS.
1000-gal., $35; 2000-gal., $48.
Centrifugal Pumps. Deep Well Pumps. Cylinders. Cylinders. Cylinders
Single, double acting. Guaranteed to pump as much as new; 8-in. double acting, brand new, never in water; 80-in. long, $175.

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Used plows, mowers, rakes, cultivators, single disc riding plow, $47.50; 14-in. riding plow, $32.50; 4-gang Stockton, fine shape, $27.50; spike harrows, bean cultivator, $45; spring tooth harrows. Emerson mower, like new, $55.
Tons pipe fittings, Ls, unions, Ts, gates.
IRRIGATING PIPE—3000 ft. 4-in. 19c; 4-in. riveted 16c; 2000 ft. 3-in., 13c.
DEEP WELL PUMP, BULLDOZER, with 7-in. cylinder, 100 ft. 8-in. casing, rods all for $225. Hand and windmill force pumps, $2.00 up. Deep well, double-acting Ames, $145, or complete with 7-in. cylinder 100-ft. 8-in. pipe, rods, $375. Large Bulldozer pump, $78; small size, $42.50. No. 4 vert. B. & J. two-step centrifugal pump, $150. 6-in. horizontal centrifugal, $125. Many others.
Automatic chicken feeders, $2.50 capacity 50 chickens; rendering kettle, $10; alfalfa cutters, bone grinders, blower, cable; big hay fork, $6.75; low down tank pump, $7.50; wheelbarrows.
Sundries, cheapest in town; material guaranteed. Office DEMMITT CO., 120 No. Main, upstairs. Yards 816 Yale. Phone 15191, Los Angeles.

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All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.
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Automobile Motors for Sale—These used motors in fine condition; for stationary work, pumping or for tractor. Bargain prices. Big supply. Send for catalog. Economy Auto Parts Co., 490 Golden Gate Ave., San Francisco.

Gasoline Engines, the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

WANTED

Wanted—Experienced dairyman for fine 40 acre complete dairy ranch near Los Angeles. Open to sell on easy terms or lease. Fine future. Must have some money or might exchange for income property. Value $40,000. Address W. J. Holden, R. F. D. 13, Box 144, Los Angeles.

Board and Room—Young mother and two children want quiet place in country. Must have plenty of fresh milk and nourishing plain food. No sickness. Just tired and run down. Box C, Cultivator.

Wanted — Experienced herdsman for Shorthorns and Berkshires. Married man. Fair Oaks Ranch, Willits, California.

Want to Hear From Owner of farm or fruit ranch for sale. O. O. MATTSON, St. Paul, Minnesota.

Wanted—Few carloads chicken fertilizer. Address Route 2, box seventeen, San Bernardino.

LIVE STOCK

D. E. Kelliher—Importer and Breeder of Hampshire sheep, Eugene, California, offers for sale a choice lot of yearling Hampshire rams sired by Walnut Hall and Butterfield Rams, purchased at Salt Lake, August, 1916, also a few yearling ewes of same breeding. Inspection and correspondence invited.

Persian Sheep Rams — Imported stock, superior in all points, very large breed, quick maturity, hardy, free from disease. C. P. Bailey & Sons Co., San Jose, California.

Shetland Ponies—Dispersal sale. Write for list. N. C. Sorensen, Onalaska, Washington.

MISCELLANEOUS

For Sale to citrus fruit growers: 10,000 gallon smudge oil; 1000 Dunn 7-gallon heaters; one 500-gallon tank wagon; two 6000-gallon storage tanks; 10 Canco torches; 10 5-gallon filling cans. L. G. Baldwin, Upland, California.

To Reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

For Sale—Stock feed. Carrots, fresh and good quality of 20 acre patch, $9.00 per ton with tops, $13.00 per ton without tops. All f. o. b. field. I. Tawa, R. F. D. No. 2, Los Angeles. Phone Boyle 3114.

ENGINES

Several New and Slightly Used Engines. ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

For Sale—One 15-30 Gas Pull Rumley engine, cost $2000.00, will take $1500.00. Abram Marron, Jr., Box 10, Oceanside.

CATTLE

49 Head of Registered Guernseys; 25 for sale, cows and heifers; May Rose breeding. We are selling all our show stuff that you have all seen at Washington State Fair and Spokane Interstate Fair. You have your pick out of the 45 head; all winners. Will mail you photos and pedigree on demand. Middledale Farms, Goshen, Oregon.

SHORTHORN CATTLE, SHROPSHIRE SHEEP, Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Guilford, Owners.

Pedigreed Bull Calves, Registered $50.00, unregistered $25.00. Service bulls $75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, California.

For Sale — Two fine Holstein calves, 6 months old. One heifer from 30 pound cow, bull from Cora De Kol Jarie, 28 pounds. Both fine individuals from fine stock. Sunset Ranch, Pacoima. J. Frank Bowen, owner and breeder, 712 Grant Building, Los Angeles.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, California.

Registered Shorthorns, cows with calves at foot, yearling heifers and bulls for sale. Fair Oaks Ranch, Willits, California.

Ayrshires (registered — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

Elkhorn Farm Ayrshires—For sale young bulls of exceptional breeding and individuality. J. Henry Meyer, R. D. 2, Box 82, Watsonville, California.

Sunshine Farm Jerseys — Bulls from officially tested dams for sale. E. E. Greenough, Merced.

For Sale—One registered Guernsey bull four years old. Abram Marron, Jr., Box 10, Oceanside.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

REGISTERED JERSEYS FOR SALE. J. R. CARHART, FULLERTON, CAL.

POULTRY

Fall Chicks For Sale—400,000 S. C. White Leghorn chicks from free range Hoganized stock only, for delivery from July to December, at very reasonable prices. Fall chicks are most profitable—broilers in ten weeks, pullets lay at five months. We guarantee safe delivery of all chicks to destination. Shipped safely anywhere West of the Rockies. No money in advance, pay on delivery. Special prices on 500 and 1000 lots. Finest hatchery in the world. Established over twenty years. Further information write Must Hatch Incubator Company, 424 Seventh Street, Petaluma, California.

Our Annual Cockerel, pullet and hen sale, 45 Eureka, Pasadena. 200-290 egg strain, 25 per cent-50 per cent off. 50c up. Leghorn, Wyandottes, Reds, Rocks, Anconas, Minorcas, Orpingtons, ducks, turkeys. Our early maturing winter layers develop rapidly into money makers. Hens clearing $5.00 yearly. Chicks, thrice weekly 15c, 17c, 20c worth double. James Beeson, Pasadena.

Mission Hatchery—Chicks all July. Also booking orders for fall delivery. Large or small lots. Our specialties: R. I. Reds, White Plymouth Rocks, Black Minorcas, also choice strains White, Brown Leghorns. Large capacity, modern plant, means high quality, low prices, promptness. Send for circular. MISSION HATCHERY, Campbell, California.

Black Orpingtons Lay, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, California.

Wanted 500 or more White Leghorn pullets. February or March hatch preferred. Samuel Ever, Tulare, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, California.

Eastman's Bred-to-Lay Barred Plymouth Rocks. Hatching eggs. Fairmead Poultry Farm, Fairmead, California.

RABBITS

Go Into Business for Yourself — Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

A Fortune in Rabbits—Have raised the price we will pay to $8.00 per pair. Want you to raise them for us. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

Special Sale — 30 head Flemish rabbits. Free list. Caldwell Rabbit Farm, Los Angeles.

For Sale — Rabbits.. New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.

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Slacked lime corrects sour, heavy soils, prevents gum disease and by correcting your soil wrongs, you get better results from your fertilizers. Alfalfa, beans and peas are lime plants and need lime. Slacked lime acts quickly. Price low for immediate shipment. Gypsum supplied. H. B. Matthews, 495 Douglas St., Pasadena.

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FOR EXCHANGE

Will Exchange 160 Acres improved eastern Kansas good land. Want small California ranch. J. B., 445 Lime avenue, Long Beach.

GOVERNMENT LAND

Oregon, California Government Lands—Booklet free. Tells "How, Why, Where." Write Joseph Clark, Sacramento.

HOGS

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GRAPE WILD FARMS

A few fall boars left by Royal Superbus —also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
A. B. HUMPHREY,
Escalon, San Joaquin County, California.

Poland-China Hogs — On account of the draft must sell 4 tried brood sows bred to an extra good son of I. B. A. Wonder. 3 at $75 each and one $150. Also two yearling sows big, smooth, long and bred $65 each. Also 4 September Big Bob gilts out of an imported sow will breed to Meddleing Wonder $55 each. One February boar $50, two at $35 and two at $25. 4 February gilts at $30 each. All recorded, crated and transferred f. o. b. Allen M. Lester, Care N. M. Lester, Gridley, California.

Poland-Chinas—Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair 1916 and sire of the 1917 State Fair grand champion or I. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale I. Marsh, Modesto, California.

"Billiken" Chester Whites — The Easy Feeding Mellow Type. All bred sows and bred gilts are gone. Have 15 gilts that were farrowed in May, 1917, that will be bred for September farrows. These gilts are all sired by "Billiken." One young service boar that is just 13 months old. C. B. Cunningham, Mills, California.

For Sale—Still have 3 boars and 2 gilts, 8 weeks old, sired by Smooth Jumbo Wonder, he by Mauws Long Smooth Jumbo, dam from Fessenmeyer A. Wonder stock. Price $20 and $15. Also 5 or 6 grade gilts bred to same boar. These are a bargain at $35. Rieves Ranch, Burbank, California. Phone Burbank 11.

Superba, World's Grand Champion Poland-China boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, Cal.

We Pay Cash for Hogs of All Sizes, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170. 3030 E. Vernon Ave., South 2712-J, Los Angeles.

Rancho Rubio Durocs—Thirty of the finest fall gilts we ever raised. Will begin breeding May 10. Write for prices and pedigrees. Some splendid weaned boar pigs for $25.00. Elmer Lamb, Ceres, California.

Mule Foot Hogs, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California. "The Blue Gums."

For Sale—Large smooth type registered Poland-China hogs. Brood sows, gilts, boars, pigs. Sunset Ranch, Pacoima, J. Frank Bowen, 712 Grant Bldg., Los Angeles.

Duroc-Jerseys — Sold out. Pigs by the Junior Champion and out of winning sows in May. Frederick M. Johnson, Napa, Cal.

Poland-Chinas — Will close out a few choice December pigs, both sexes, at $30 cash, crated and f. o. b. Orland. Write to Dr. H. W. Hand, Orland.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

Large Type Poland Chinas are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, California.

Duroc-Jerseys — We breed the champions. Peters, Lamson & Walker, Devore, San Bernardino County, California.

Greenwood Farm Durocs — "Size with Quality." H. C. Witherow, Palo Cedro, California.

HEWITT'S BIG TYPE POLAND-CHINA gilts and boar pigs. Hewitt & Hewitt, Dixon, California.

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Berkshires—A few very fine March farrow pigs, sired by Fair Oaks Champion. Fair Oaks Ranch, Willits, California.

Carruthers' Farm Berkshire Hogs—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, Cal.

Poland-Chinas — A few good breeding boars. S. F. Williams, Orland, Cal.

BIG TYPE POLANDS
W. H. BROWNING, WOODLAND, CAL.

GOATS

For Sale—300 Angora goats not over three years old. Frank Motte, Box 107, Arlington, California.

Toggenburg Milch Goats — Rae P. Williams, Federal Realty Building, Oakland, California.

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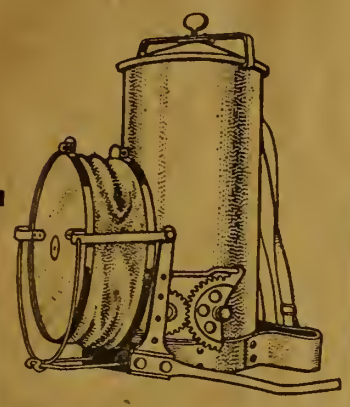

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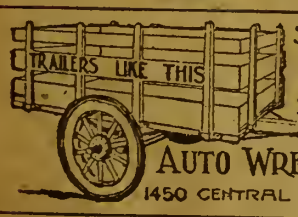

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Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Best Peach

Have an old peach orchard (irrigated) which I wish to reset, and desire to know which two varieties of clings and which two varieties of freestone peaches to plant, bearing in mind the highest qaulity of a peach, the surest bearing for every year, healthiest trees and trees that require the least labor. — Subscriber, Cucamonga.

The matter of best peach was referred to J. S. Armstrong of Ontario and he answers: "We regard the Tuscan and Phillips Cling, Lovell and Muir, in order of preference as named, the best peaches for canning in this section. The latter two varieties are freestones and are also the best for drying. They are yellow to the pit, which makes them desirable for canning. Some experiments have been carried on by some of the growers with the J. H. Hale peach, which although very red at the pit, seems to can very well, the color disappearing. The peach is quite firm, and undoubtedly in time will be recognized as one of the leading canning peaches of California."

Eye Troubles

Two of my young rabbits are having trouble with their left eyes, a dark brown matter runs from the nose and forms in the eye, the left ear lies down instead of standing upright. After two or three days they get very weak and have trouble in sitting up or moving around. The rabbits are a month old and are fed on green clover, oats, dandelions, other grasses, bread, rolled barley and boiled potatoes. They are growing very fast and are fat. It has been very warm, so I placed wet sacks for them to lie on. Do you think this caused them to take cold or is it something else?—H. C. N., Castella.

These generally come from gases arising from dirty hutches or dirt under hutch and from colds caused by dampness or drafts. Change rabbits to clean, dry, warm hutch if necessary and treat as follows: Dissolve one-half teaspoon boracic acid in one-half cup warm water, wash eyes with this and dry eyes and fur around them with soft dry cloth. Examine ears for canker and if found pour in ear a few drops of solution of olive oil and sulphur, one teaspoon of sulphur in two ounces olive oil. Give two or three treatments per week according to nature of case. Wet sacks will produce colds if left in hutch after warm part of day. Be careful in feeding especially if greens are of quick growth and juicy. Good solid flesh is more desired than loose fat so feed more barley and oats. Eye troubles are contagious so separate affected animals and disinfect your hutches.—W. D. W.

Thrips on Beans

What are the insects on the beans which I send?—Subscriber, Pomona.

These leaves are infested with very small yellowish, almost white insect. They were referred to Prof. H. J. Quayle. He writes: "The leaves are infested with thrips and these are responsible for injury to some of the leaves, although there is one leaf which has a yellowish appearance which I do not attribute to the work of thrips. Unless the bean plants are being very severely injured it would scarcely be practical to apply treatment. Thrips can be checked fairly well by spraying with Blackleaf and soap. It would be a question for the individual to decide whether or not he wishes to go to the expense necessary to control the pest."

Potato Sacks

What are the regulations as to potato sacks? Can they be used where they have brands or other printed matter, that is, old sugar or poultry food labels?—Subscriber, Santa Ana.

So far as we know there is no objection to such use of old sacks. The only possible objection we see is that they are not so neat in appearance as new sacks, but new sack prices demand conservation.

Ducklings in Water

I would like to know how old Indian Runner ducklings must be before allowed to enter water. — Subscriber, Escondido.

Ducklings should not be allowed to swim until the down which is their first clothing has changed to real feathers. This is because they are so easily chilled at first and the down does not protect the skin as feathers do. As ducks do not require water for their health and comfort, except enough to wash their heads in, there is no occasion for letting them swim as long as there is the slightest doubt about their being ready.—J. A. K.

What Feed for Poultry?

In your article on the University of California poultry school in the California Cultivator for June 8 you refer to the change in the mash ration for hens. I would like to know the scratch feed when the mash is ground milo and barley and beef scrap. I am feeding my hens whole milo and rolled barley for their grain, giving them a wet mash of table scraps, (especially boiled small potatoes) a little beef scrap and bran. If there is anything easier to feed and cheaper I would like to know it, for with milo at 4¼ cents a pound, rolled barley nearly four cents, there is no profit at the present price of eggs.—Subscriber.

With the mash of ground milo, ground barley, beef scrap and cocoanut meal will be given a scratch feed of cracked corn, whole milo and sprouted barley. The corn, if I remember correctly, was raised on the University Farm. Professor Dougherty did not advocate feeding corn when it must be purchased. There is nothing cheaper than milo and barley; in fact, they seem to be the only grains within reach for most of us. The whole barley sprouted, or soaked till the sprouts begin to show, is generally preferred to rolled barley. It costs a little more but is more palatable. Your wet mash of boiled potatoes, bran and beef scrap is good. With a little green added it would be better still.—J. A. K.

Carrots for Dairy Cows

How are carrots to take place of pulp as feed for dairy cows? These are common table carrots but fairly large size. Would they make more butter fat, and how many pounds should be fed?—Subscriber, Norwalk.

Carrots are excellent for dairy cows. Some claim they are almost as good to give color to butter as springtime grass. Their greatest value is in improving the appetite. Such feed does not increase the percentage of butterfat but does increase the quantity of the flow of milk, consequently greater total of fat. Henry and Morrison say, "This root is relished by horses of all ages and conditions, but should not be fed in large amounts to hardworked or driving horses. Carrots also serve well for other stock, especially dairy cows. Hills of the Vermont station writes: 'Carrots far surpass beets in feeding value.'" They are perhaps rather more expensive than other root crops, although the larger growing varieties will yield from 10 to 20 tons per acre. They contain about 12 per cent dry matter, a great proportion of which is sugar.

Beans

What would you consider best bean for home planting in this section to have dry beans for winter use? Is the Pinto particularly good? — Subscriber, San Diego.

One of the best beans for the coast section of this county is the Lima, which may be seen by the immense plantings along the ocean front of your county. Blackeyes, Pintos and Teparies are among the best for interior, warmer valleys.

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Household Department

TWENTY-ONE

When youth is turning twenty-one
And boyhood drops the toys it knew,
When there's sharp drilling to be done
To hasten victory o'er the Hun,
America will find him true—
Her manly pride, her loyal son.

Dear are the dreams youth leaves behind—
For life begins at twenty-one.
Out there is honor's badge to find,
With courage of our father's kind.
But there's a man behind the gun—
A million more behind him lined.

If it may be brave France shall keep
Our hope gone forth at twenty-one,
God knows, tho' first our hearts must weep,
France will walk proudly where they sleep.
So shall their triumph, nobly won,
Live on, a better world to keep.

Yet, on some glad, victorious day,
When right has crushed the mighty Hun,
They will return—all those who may—
Love crowned, anointed of the fray,
They costly right to manhood won
As we had wished, in honor's way.

No vain regret has twenty-one.
Its glad, prophetic day is here.
Life's great adventure has begun,
No clouds obscure ambition's sun.
March on! O faith, without a fear,
New Worlds are wrought, at twenty-one.
—George E. Bowen of the Vigilantes.

THE CONSCRIPT

Concluded from last week.

He did not undress. Only he removed his shoes. In his stockinged feet he could creep from the house unheard and seek sanctuary in the night woods. He would wait till all was quiet. until the woman was in her bed and asleep—then he would slink away and leave her.

He blew out the lamp and sat silently in the darkness for a long time—hours it seemed. A pall of quiet rested over the house and over the world. Sims deemed it was safe to go now. He opened his door softly and tiptoed toward the front door. It was but a step down the narrow hall. His hand was on the knob when he heard a stealthy movement without, and a whisper:

"Ready. Smash in the door. We'll yank her out and tie her to a tree. . .'.

Sims was too late, he was trapped!

The next instant a panel of the door splintered; the next instant Sims had to spring back to avoid the door as it tore from its fastenings and hurtled inward. As he sprang a light glowed, and he knew the woman was standing in her door, lamp in hand.

"You're there . . ." he heard her say. She was depending on him.

With the falling door came a couple of men. Their momentum brought them against Sims, and before he could act on his own volition, he was, for the first time in his life, locked in bodily combat.

Two men were upon him, themselves taken by surprise. Behind them he saw rushing in two more. These were useless in the combat, for Sims and the two men who rushed upon him filled the narrow hall from wall to wall.

In those first seconds Sims fought like a cornered rat, lashing out with fist and foot. He was terrified. Each second he expected the tearing stab of physical pain, for the pain which was a horror to him. He fought blindly, using his great strength without his brain's direction.

"I'll hold the light." said the woman, her voice trembling but clear.

The rays of the lamp fell upon something that glittered. It was a knife in a man's hand. Sims uttered a bellow and lunged forward. The knife fell, penetrated the flesh of his shoulder, tore its way through cloth and skin and tissue. Here was the pain! He sensed it, wondered at it. This, then, was the thing that had made a coward of him! This was agony!

Sims caught the man, jerked him close, lifted him clear of the floor while the man, his knife lost, battered Sims' face with his fists. The second man was not idle, for Sims grunted and staggered under a blow from a short club.

From that second Sims fought, not like a rat, but like a man. He had experienced pain, pain received in battle, pain given by cold steel. He had felt it, and had endured it, was able still to fight. He hurled the man he held upon his fellow so that the two crashed to the floor. One did not arise, but the remaining three Hobbs' Crackers trampled their companion's body to get at the big young man who stood between them and the woman holding the lamp.

They flung themselves upon him, striking, gouging, seeking to pull him down upon the floor where he would be at the mercy of their feet, but he spread his legs mightily and resisted with the strength that Nature had given him. . . . They drew back, hesitated for a new rush. . . . Sims emitted a bellow, which was no bellow of fear, but of rage, of battle lust, and sprang. He charged as the lion charges, blindly, furiously. Each hand seized the neck of a man. He stopped, braced, and swung his hands together, so that head cracked against head. It was no light contact. The possessors of the heads dropped limp and motionless. The fourth man, large of frame as Sims himself, did not lose heart. Sims met him breast to breast. His arms passed around Sims' waist, Sims' arms about him, and each man's chin rested on the other's shoulder.

So they stood, motionless, apparently resting, but they were not resting, for each man was putting into his arms and back every ounce of his strength. Each man was striving to dig his chin into his enemy's throat, to bend backwards his head and shoulders while holding the waist in a crushing grip.

There was no motion. It was a terrible spectacle of relentless effort. Suddenly one of Sims' shoulders lifted a trifle; his arms tightened in a supreme effort. Slowly, slowly, the man's shoulders moved backward, backward. Sims dug in his chin, he felt the arms of his antagonist relax. There came a gurgle, a dull snap, and the man hung limp in his arms. . .

He staggered back and leaned against the wall. At his feet lay four men, writhing, groaning, or quite still. He had done that! Something sticky was on his hands. He looked. It was wet and red. . . . He who had been afraid of blood!

The woman advanced and threw the light upon him.

"You're hurt. . . . Your head! It's bleeding! . . ."

"Yes," he said in a queer voice, "I'm stabbed through the shoulder, too. I guess other places."

"But you did it," she said quietly. "Four of 'em! . . Your Ma must be proud of you."

He looked at her oddly. "Pain," he said, "isn't so bad . . not so bad."

"No," she said, not understanding. ". . . What a soldier you'll make!"

He sank to a sitting posture on the floor and giggled ridiculously. "I was running away," he whispered, "running away from the draft . . . I was running because I was afraid to fight."

"Here," she said with sudden energy, "hang onto yourself. We got to see to these."

Blindly, weakly, staggering as he walked, he helped her dispose of the

To the People of California:

★ ★ ★

TO CLEAR up any confusion that may exist in the minds of housewives concerning food conservation, the following definite program of food saving is issued with the explanation that frequent changes are made necessary according to the needs of the Allies and our own people:

1. All kinds of staple foods, especially wheat, meats, fats and sugar should be most economically used. Use substitutes for these four commodities.

2. No food should be hoarded. Hoarding is the holding, contracting or arranging for food by any person in excess of his reasonable requirements for use or consumption by himself and dependents for a reasonable time. This does not refer to stocks of home-grown vegetables and home-canned or preserved fruits.

3. All householders who can entirely eliminate the use of wheat until the next harvest, about September 1st, should do so.

4. Householders who are obliged to use wheat should not use more than a total of 1½ pounds of wheat flour or prepared wheat, in any form, per person per week, including the wheat flour in Victory Bread, and including the wheat flour or prepared wheat in crackers, pastry, macaroni, breakfast and other foods.

5. Victory Bread is bread manufactured by bakers under the rules of the United States Food Administration. In estimating flour consumption, 1¾ pounds of Victory Bread may be considered equal to 1 pound of wheat flour.

6. In buying wheat flour an equal weight of other cereals as substitutes for wheat flour must be bought pound for pound. This is the 50-50 Rule. In buying mixed flours, the substitutes in them may be counted so that a smaller proportion of substitutes may be bought with these flours than with white flour. In buying graham and whole wheat flours (containing not less than 95% of the entire wheat) 6/10 pounds of substitutes shall be purchased with every pound of such flours.

7. Wheat flour substitutes are hominy, corn grits, cornmeal, corn flour, edible cornstarch, barley flour, rolled oats, oatmeal, rice, rice flour, buckwheat flour, potato flour, sweet potato flour, soya bean flour and feterita flour and meals.

8. Householders in towns and cities may not buy more than ⅛ of a barrel of flour or 2 pounds of sugar at any one time. Householders in rural districts may not buy more than ¼ of a barrel of flour or 5 pounds of sugar at any one time. In no event shall any purchaser have more than 30 days' supply of either on hand.

9. Householders should not use more than ¾ pounds of sugar per person per week.

10. In addition to the above, however, sugar may be used for home canning, and will be available to the householder for that purpose upon signing a certificate that such sugar is desired and will be used only for that purpose.

11. No wheat flour, or prepared wheat in any form, should be used for any purpose other than human consumption.

12. Meats of all kinds, particularly beef, should be most economically used, eliminating all waste.

13. Fresh milk and milk in evaporated and condensed form and cheese may be liberally used.

14. Butter may be used for normal consumption.

15. To save transportation local supplies should be grown and used.

U. S. FOOD ADMINISTRATION FOR CALIFORNIA

June 26, 1918.

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bodies of the men so that she could minister to them.

"I'll do what I can," she said, "till mornin'. Then we can send word to their families to come git them.

Until she had done what she could for the men she did not touch Sims' wounds . But now she forced him into a chair and washed and salved and bandaged his hurts. . . . They were many and painful . . . and as she bandaged she talked.

" . . . You was runnin' away. I kind of figgered somethin' was wrong . . . A man as brave as you thinkin' he was afraid! . . . Well, you'll be runnin' back tomorrow . . . "

"Yes," he said simply, and presently, under the soft touches of her hands upon his brow, he slept.

When he awoke in the morning the injured men were gone. "I'll be going, too, after breakfast," he said.

She nodded assent. "If you're able to walk," she said.

When it was time to say good bye she extended her hand.

"If you see my boys—" she said, and he knew what she would have him say to them.

"Good bye," he said—that was all.

Part of the way he limped painfully, part of the way he was lucky enough to catch a ride, and so arrived in midafternoon at his home town. Curious eyes followed his figure as he limped straight to the room occupied by the officials in charge of the draft.

"I was drafted today. I've come to report," he said.

"Name?"

He told them, and they studied their lists.

"Some mistake," said the official, "you were not drafted."

He staggered and sagged into a chair offered by a ready hand. Not drafted! . . . He had known he would be—and had run away. The whole thing had been vain and useless . . . No, it had not been vain and useless . . .

"I—I've got to be drafted," he said chokingly. "I've got to serve . . . You must fix it . . . "

"Why, man, you're a wreck now."

Sims faced him levelly, with burning eyes. "I got this learning to fight for my country," he said. "I was afraid—afraid of the draft, and ran away." And then he told them. "So I've got to go. . . . Can't you see? I've got to go. . . . What would she think?"

The officials looked from one to the other, and nodded their heads. "I guess he's right, gentlemen. He's got to go. . . . Here, scratch out that name—and write down Sims."

"Thank you," said Sims quietly.

As one man the officials stood, facing Sims, and lifted their hands in salute. His eyes widened with surprise, with joy. They were saluting him. Awkwardly he lifted his hand to his temple in response. Then he turned, pride radiating from every feature and limped out of the office—a Conscript.—Milestones.

THE FUNCTION OF THE FOOD ADMINISTRATION

To so guide the trade in the fundamental food commodities as to eliminate vicious speculation, extortion and wasteful practices and to stabilize prices in the essential staples.

To guard our exports so that against the world's shortage we retain sufficient supplies for our own people and to cooperate with the Allies to prevent inflation of prices.

To stimulate in every manner within our power the production and saving of our food in order that we may increase exports to the Allies to a point which will enable them to properly provision their armies and to feed their peoples.—Herbert Hoover.

SAVE MONEY BY CARING FOR YOUR CLOTHES

Money, time and labor may all be saved if the clothing is carefully cared for each day.

The hole should be mended when it first appears. If left it grows larger disfiguring the garment to a much greater extent and requiring more time for repair.

When hooks, eyes, snaps or buttons are not promptly replaced the garment is soon pinned out.

If all spots are removed and the garment carefully brushed and pressed before it is put away, it is always ready for wear.

This constant care not only lengthens the life of a garment, but keeps it looking well as long as it lasts.—Charlotte E. Carpenter.

"IZE"

If in thy day thou would'st be wise,
Regard this mighty truth—"Time flies."
As dawn shall tint yon Eastern skies
And sun in splendor start to rise,
Observe thee well and do likewise.
And when the day is of full size,
Work like Sam Hill and advertise.
But these are days to specialize,
So, as old Kaiser Wilhelm tries
To load the atmosphere with lies
And start the most heart-rending cries
From innocents, why, let's surprise
His nibs with wallop 'twixt the eyes
His ugly mug to paralyze.
Then trim his frame to normal size.
But if, as we may well surmise,
We surely cannot all arise
In fighting mood to land such prize—
We'll do our best—let's HOOVERIZE.
—Samson Siftings.

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SHIRTS, PANTS AND OVERALLS made of the genuine Ironclad Khaki (the kind Uncle Sam uses) carry the yellow "army" label, like the above. LOOK for it in the garment before you buy.

Write today for free samples of Ironclad Khaki Cloth, and Miss Ironclad Khaki, the kid glove finish ladies' overall cloth.

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Steady heat concentrated on the cooking. No smoke or odor; no dust or dirt. Lights at the touch of a match and heats in a jiffy. Bakes, broils, roasts, toasts—all the year round. Economical. All the convenience of gas.

In 1, 2, 3 and 4 burner sizes, with or without ovens or cabinets. Ask your dealer today.

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From Toil and Worry to Leisure and Relaxation

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located 16 miles from Redlands and 86 miles from Los Angeles, in the still depths of the mountains on roaring, tumbling, crystal Mill Creek, 5200 feet up in the San Bernardino range; makes an ideal place for a complete rest and is easy of access.

The Rest and Pleasure Pavilion.

Forest Home is not a full dress resort, but a delightful place for real folks who enjoy comfort, rest and a good time.

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The Hotel is conducted on the American plan and the Table is generous in its appeal. Mountain trout dinners on the regular bill are served at least once a week, and the best the market affords is served.

You can have a housekeeping tent or cabin, supplied with all the necessities of a comfortable mountain home, if preferred.

For Information and Reservations Write Direct to

Forest Home Outing Co., Forest Home, Cal.

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Built Especially for California Conditions

THE FARQUHAR VIBRATOR SEPARATOR

Past the Experimental Stage
Eleven different models, with or without Engine, mounted complete
Ranging in Price from $210 to $1,000
All Repair Parts Carried

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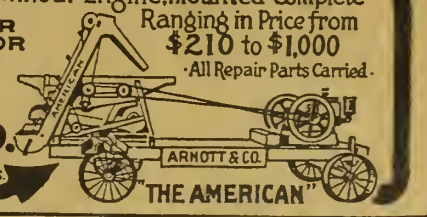

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Money Back if not satisfied on my New 90 Day Engine Offer

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—protects thousands and thousands of buildings of every shape and character from the ravages of weather.

For 30 years western farmers have depended upon "Pioneer Roofing" and that their confidence has not been misplaced is shown by the ever increasing sales.

There is a grade or weight made to meet the individual requirements of every type of building.

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Pioneer Paper Co.

Manufacturers

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Los Angeles, Cal.

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Fleur de Soufre, Anchor Brand Velvet Flowers of Sulphur and Eagle Brand.

Packed in barrels and double sacks, are the fluffiest and PUREST Sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

Try our new brand of sublimed 100 per cent pure VENTILATED Sulphur for making Paste — Atomic Sulphur.

For Lime Sulphur Solution, use our S BRAND Refined Flour Sulphur which we will furnish at a price so cheap that you cannot afford to purchase ready-made solutions.

SAN FRANCISCO SULPHUR CO.,
624 California Street, San Francisco, Cal.

We are equipped to make immediate shipment. Send for illustrated booklet; also price list and samples.

Los Angeles Market

Los Angeles, July 2, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.
California extra creamery 47

Dairy Exchange price past week on extras.

June	26	27	28	29	July 1
'18	45	45	47	..	47

Rcts. five days ending July 1, 199,500 pounds.

CHEESE

Brokers prices:
California fresh, lb. 25
Eastern Daisies 29
Domestic Swiss 40
Oregon triplets 27

EGGS

Exchange quotations. Prices to retailers 2 to 3 cents higher.
Case Count 41
Fresh extra 43
Pullets 39

Dairy Exchange prices past week on fresh extras.

June	26	27	28	29	July 1
'18	41	42	42	..	43

Receipts five days ending July 1, 1315 cases.

POULTRY

We quote to producers.
Broilers .....23@30
Fryers 30
Hens, small, 19; heavy 25
Ducks, lb. .....18@24
Roasters 30
Roosters, old 15
Turkeys .....25@35
Geese, young, lb. 22
Rabbits, live, 17@18; dr. 40

LIVESTOCK

We quote cwt. f. o. b. L. A.
Corrected Wednesday morning July 2, by the Cudahy Company.
Cattle—
Beef steers, av. 1000-1100 lbs—11.50@12.00
Heifers, good .....8.50@9.00
Cows, good .....8.00@8.50
Canners .....5.00@5.50

Hogs—
Av. 125 lbs. 15.50
Av. 150 lbs. 16.00
Av. 175-225 lbs. 16.50

Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers .....11.00@11.50
Ewes .....10.50@11.50
Lambs .....14.50@15.00
Yearlings .....11.00@11.50

POTATOES

Wholesale selling prices:
Northern 1.80
Idaho Russets 1.80
New, lug .....55@60
Sweet, lug 2.25

ONIONS

Wholesale selling price, cwt.:
Bermudas, cr. 1.15
Crystal Wax, 50-lb cr. 1.50
Garlic 12

VEGETABLES

Wholesale prices:
Artichokes, doz. .....60@85
Jerusalem. lb. 7½
Asparagus, lb. .....11@12
Beans—Wax, lb. .....5@6
Ky. Wonder .....7@7½
Limas, lb. 15
Beets, sk. 1.50
Cabbage, lb., 1½; sk. 1.25
Carrots, doz. 30
Corn, sugar, lug. 1.25
Cucumbers, lug 90
Egg Plant .....8@9
Horseradish, lb. 15
Lettuce, doz. 45
Leeks 35
Okra, lug 1.75
Mint, doz. 40
Onions, green, doz. .....25@30
Peas, Tel., lb. .....11@12
Peppers, Chili, lb., 14@15; Bell 30
Parsnips, doz. 40
Parsley, doz. 20
Radish, doz. 30
Rhubarb, C. W. bx, 1.15; Strawberry.1.30
Romaine, doz. 40
Spinach, doz. 30
Squash — Summer, lug 1.10
Tomatoes, cr. 1.50
Turnips, doz. 50
Watercress, doz. .....35@40

FRUITS

Wholesale prices:
Apples, new, bx 3.00
Apricots, lug 1.75
Bananas, lb. .....7@7½
Cantaloupes — Ponies, cr. 2.15
Standards 2.50
Cherries, Black, lb. .....12@15
Currants, cr. 1.85
Figs, bx. 1.50
Gooseberries, lb. 12
Loquats, lb. 9
Peaches, cr. 1.65
Plums, lug .....2.25@2.50
Strawberries, tray 1.10

CITRUS

Lemons, packed, 8.25; loose 6.50
Juice 4.50
Oranges — Valencias 6.75
Grapefruit .....2.50@2.75

DRIED FRUITS

Date for making contracts on 1918 crop postponed again by government order to July 15.

BEANS

These are prices made by wholesaler to retailer.
Lady Washington 13.00
Limas 13.50
Pinks 8.00
Manchurian Reds 8.50
Baby Mex. 9.00
Garbanzos .....9.25@9.50
Small Whites 13.00
Blackeyes 8.50
Teparies .....8.50@9.50
Lentils 24.50
Mex. Red. 8.75

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....15@18
Amber extracted .....10@11
White comb, per case 7.00
Lt. amber comb, per case .....5.00@6.00
Beeswax .....36@40

HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A.
Tame Oat .....26.00@28.00
Volunteer Oat .....14.00@16.00
Wheat .....23.00@26.00
Barley .....23.00@26.00
Alfalfa .....19.00@22.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

Alfalfa hay $25.50 car lots f. o. b. L. A.; $23.00 f. o. b. common shipping points, taking $2.50 carload rate to destination.

GRAIN AND FEEDSTUFFS

Prices on Local Grain Exchange:

	Bid	Asked
No. 1 bright feed barley	$2.60	$2.65
Milo maize, local	.....	3.50
Oat middlings	.....	36.00

San Francisco Markets

San Francisco, July 1, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:
Extras 50
Firsts 46½

Prices Extras past week and year ago:

June	25	26	27	28	29
'18	47½	47	47	47½	50
'17	35½	36½	35½	35½	..

Receipts five days ending June 29, 316,000 pounds.

CHEESE

Dairy Exchange quotations:
Cal. Flats 22½
Cal. Y. Am. 25
Ore. Y. Am. 26
Jack Cheese, full cream .....22@23

EGGS

Dairy Exchange Quotations:
Extras 45
Firsts 40½
Selected Pullets 40
Firsts 38½

Prices Extra past wk. and yr. ago:

June	25	26	27	28	29
'18	45	45	43½	44½	45
'17	30	30½	30½	31½	..

Receipts five days ending June 29, 12,512 cases.

POULTRY

We quote to producers, lb.:
Large hens, 29@30; small, do, 25@27; broilers and fryers, ¾ to 1½ lbs., 32@33; 1½ to 2 lbs., 35; 2 to 3 lbs., 36@38; young colored stock, over 3 lbs., 40; old roosters, 19@20; ducks, lb., 22@28.
Squabs, doz. .....2.50@4.00
Belgian Hares, live, lb. .....15@17

LIVESTOCK

Prices gross weight:
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.
Steers, lb., 10@12½; thin, 8@9; cows and heifers, 7½@8¾; thin, 4½@6; calves, 7@10¼.
Sheep—Per lb. gross weight: Unshorn wethers, 11@12; ewes, 9½@10; lambs, yearlings, 11½@12; milk, 14@14½; shorn sheep, 1¾@2.
Hogs—Hard grain-fed, weighing 100 to 140 lbs., 15½; 140 to 300 lbs., 16; 300 to 400 lbs., 15½.

POTATOES

Wholesale selling prices at wharf, cwt.:
River, new, cwt. .....1.75@2.00
Garnets .....2.00@2.15

ONIONS

Wholesale selling price on wharf, cwt.:
Garlic, lb. .....3@4
New Red, sk. 1.25
New Yellow, sk. 1.75

VEGETABLES

Wholesale selling price:
Artichokes, cr. .....2.50@4.00
Asparagus, lb. .....4@7
Beets, sk. .....75@1.00
Beans, String, lb., 6@7; Wax.....4@5
Limas, lb. .....10@12
Beets, new, sk. .....1.50@1.65
Cauliflower, doz. .....40@60
Cabbage, lb. .....1½@1¾
Carrots, sk. .....90@1.00
Celery, cr. .....1.50@2.00
Corn, green, sk. .....2.50@2.75
Cucumbers, lug. .....1.25@1.50
Egg Plant, lb. .....5@6
Lettuce, doz. .....15@20
Parsnips, sk. .....85@1.00
Okra, lb. .....15@17½
Onions, green, bx. .....65@75
Peas. lb. .....6½@7½
Peppers, Bell, lb., 12@15; Chili ....8@10
Rhubarb, bx .....1.75@2.00
Squash, Summer, bx. .....75@85
Spinach, cr. .....50@75
Tomatoes, cr. .....1.25@1.50
Turnips, new, sk. .....65@75

FRESH FRUITS

Apples, green, bx. .....1.00@1.25
Apricots, cr. .....90@1.10
Bananas, lb. .....7@7½
Berries—Pr. ch.: Strawberries, ch. 7.00@8.00; blackberries, 6.00@8.00; loganberries, 6.00@8.00; raspberries, 8.00@10.00; gooseberries, lb., 5@6; English, 9.
Cantaloupes — Ponies .....1.00@1.50
Standard .....2.00@2.50
Cherries—Drawer, 1.00@1.25; loose, lb., black, 4@7; fy., 8@10; Royal Anne, 7@10.
Currants, dr. .....60@70
Figs, bx.: Mission .....75@1.00
Grapes, bx. .....1.75@2.00
Peaches, cr. .....1.00@1.25
Pears, green sugar, cr. 75
Plums, basket 75
Pineapples, doz. .....5.00@6.00
Watermelons, lb. 2½

Steady Power

RED CROWN GASOLINE

The Gasoline of Quality

A continuous, uniform chain of boiling points makes "Red Crown" *dependable*. No "mixture" can give the same satisfactory results. Look for the Red Crown sign before you fill.

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(California)

Little Friction

Friction is the resistance which a body meets from the surface on which it moves.

There is very little friction in the Yuba Ball Tread Tractor as it runs on enlarged ball bearings. The Catalogue tells about it.

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Department B
433 California Street
San Francisco

Yuba Tractors

John Deere Plows and Wagons
Contractors' Equipment

A. F. George Co.
200 N. Los Angeles Street, Los Angeles, Cal.

Fertilizer

Make your Ranch and Orchard produce the limit while prices are high by the use of High Grade Fertilizer.

Nothing Better Than Fish Tankage

Prices on Request

Rogers Brown & Co.

1307 Baker-Detwiler Building
Los Angeles, Cal.

You should have your Soils, Fertilizers and Waters Analyzed by

Mark Walker, B. S.
211 West First St. Los Angeles, Cal.

CITRUS

Lemons, bx., according to size: Fy., 7.50@8.00; lemonettes, 6.00@7.50; grapefruit, 1.75@2.75. Oranges, bx.: Valencias, 5.00@6.00.

BEANS

Jobbers' prices, cwt., recleaned:

Limas	12.25@12.50
Bayous	8.40@8.60
Small Whites	Nominal
Large Whites	Nominal
Mexican Reds	8.50@8.75
Blackeyes	7.50@7.75
Pinks	7.25@7.50
Red Kidney	11.75@12.00
Cranberry	Nominal
Teparies	8.50@8.75

DRIED FRUITS

(See Los Angeles markets.)

HONEY

Jobbers' prices:

White extracted	20@22
Light amber extracted	15@18
Amber extracted	12@14
White Comb, cs.	4.50
Light amber comb, cs.	3.50@4.00
Beeswax	36@40

HAY

Under date of June 29, Scott, Magner & Miller says:

Receipts past week, 1457 tons. The falling off in the receipts is no doubt caused by inability of farmers to get their hay baled as well as some little difficulty in obtaining cars for shipment. This decrease is somewhat of a surprise to the trade as it was natural to suppose that they would be much larger from week to week. As the food administration will not countenance the buying of hay or other commodities for speculative purposes, it is a question with a great many dealers as to what constitutes speculation. We believe that the purchase of hay for storage, if done with the intention of getting higher prices than the cost of hay plus the storage charges, will be looked upon with disfavor; while should the hay be purchased for storage only to fill contemplated business at the regular range of profit over cost, then it will be looked upon favorably. However this may be, it certainly will be determined during the season.

Alfalfa is showing considerable firmness and there is a good demand, especially for the river products, the second cutting of which is just about ready to arrive.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market — for prices to consumers charges of cartage, commission and handling must be added according to conditions:

Fancy Wheat Hay (light 5 wire bale)	25.00@26.00
No. 1 Wheat or Wheat and Oat Hay	21.00@23.00
No. 2 Wheat or Wheat and Oat Hay	18.00@19.00
Choice Tame Oat Hay	23.00@24.00
Other Tame Oat Hay	20.00@22.00
Wild Oat Hay	17.00@20.00
Barley Hay	17.00@20.00
Alfalfa, first cutting	15.00@20.00
Stock Hay	14.00@16.00
No. 1 Barley Straw, bale	50@80

GRAIN

Wheat—Government prices: Common white hard, base price, $3.50 per cental, or $2.10 per bushel of 60 pounds delivered in terminal warehouses in bulk; soft white, base prices, two cents per bushel less, or $2.08 per bushel; white club (including Sonora), $2.00 per bushel. If wheat, after cleaning, weighs 60 pounds or more to bushel, base price stands; if 58 to 60 pounds to bushel, three cents per bushel reduction; if 56 to 57 pounds six cents per bushel less; if less than 56 pounds, grain becomes sample grain and sells on its merits up to within one cent per bushel of 56-pound wheat. Additional charge made for sacks.

SEEDS

Prices in round lots, lb.:

Millet, recleaned	5@5½
Alfalfa, lb.	20@21
Flax	7@7½
Hemp	5@5½
Rape	2½@3

Citrus Fruit Market

Los Angeles, July 2, 1918.

The June drop has not been heavy but growers are still watching and expect many fruits still on the tree will yet drop. North of the Tehachapi the drop has been more serious and some estimate the crop will not be over 50 per cent of normal.

The marketing conditions remain fairly favorable though prices are not holding up to earlier high level. Presumably this is because of immense quantities of fresh fruits.

Lemons are likewise showing easier tone though occasional sales are made around a $10.00 mark.

Shipments

Shipments of citrus fruits to date since November 1, 1917: Southern California; oranges 11,655, lemons 4003, total 15,658. To same date last season oranges 31,871, lemons 6044, total 37,915. Central California this season; oranges 2536, lemons 115, total 2641. Last season to same date; oranges 4655, lemons 164, total 4819. Northern California; oranges 203, last year same date, 845.

AT THE AUCTIONS

June 27

New York: 16 oranges, 2 lem. Val. 2.65-7.05, lem. 6.45-7.45, grapefruit 2.50-3.20.

Philadelphia: 4 cars. Val. 4.00-6.75, lem. 6.15-8.70.

Boston: 9 cars. Val. 2.20-6.50, lem. 3.85-7.90, grapefruit 3.30.

June 28

New York: 14 cars. Val. 3.05-7.95, lem. 4.15-6.65, grapefruit 1.70-1.80, Mikes 4.00-5.65.

Cleveland: 4 cars. Val. 3.35-5.00, lem. 7.25-8.25.

Boston: 8 cars. Val. 3.60-6.85, lem. 4.80-7.65, grapefruit 2.75-2.80.

St. Louis: 7 cars. Val. 4.00-6.60, lem. 2.20-8.05, lemonettes, 3.85-4.00.

Pittsburg: 3 oranges, 1 lem. Val. 2.40-6.25, lem. 6.30-7.35.

July 1

New York: 17 oranges, 2 lem. Val. 2.80-6.90, lem. 7.20-8.00, grapefruit 1.30-1.90.

Philadelphia: 7 cars. Val. 3.40-6.80, lem. 9.10.

Boston: 12 cars. Val. lower. Val. 4.00-6.65, lem. 5.55-7.75.

St. Louis: 6 cars. Val. 3.75-6.40, lem. 3.65-6.20.

THE SLACKER HEN

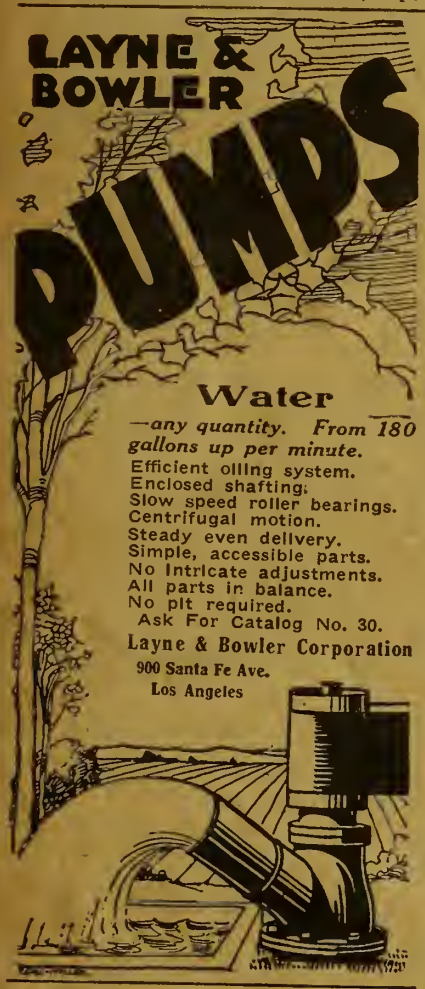
Continued from Page 17

er. Then the slacker hen is a quiet hen, doesn't go about the run singing, nor talking to her caretaker. These three things; the color of the comb, the condition of the crop at night and her dull, listless manner are almost certain marks of the slacker. I have in mind one little Rhode Island Red in my own flock. She isn't a fancy bird, but her crop is always full, her comb always red, and she is always moving. When you see a bird like that, you know without asking that she is no slacker, and that is the only kind of hen worth keeping. Let us be very hard hearted with these slacker hens that eat up our profits. Don't let one get by on her looks. If she is there with the goods, let her live; if not, off with her head!

WEATHER CONDITIONS

San Francisco, Cal., June 29, 1918.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	.00	23.34	46.04	86	48
Red Bluff	.00	12.10	25.03	112	60
Sacramento	.00	10.61	20.09	104	50
San Francisco	.00	11.48	22.27	74	49
San Jose	.00	9.36	16.79	92	46
Fresno	.00	10.27	9.68	104	58
San Luis Obispo	.00	18.06	20.51	74	50
Los Angeles	.00	13.85	15.64	78	58
San Diego	.04	8.04	10.01	72	62



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In U.S.A.
SCHRADER UNIVERSAL TIRE PRESSURE GAUGE

Farm for Profit

and Help U. S. Win the War

Authoritative tests have proved that as high as 50 per cent increase in crop production may be expected from proper use of fertilizer. Do you realize what that increase means? Fertilizer is the basis of crop production, and compared to the prices of the crops they help to produce, fertilizers were never so cheap as they are today.

MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

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Seashore— PACIFIC COMFORT-SPEED SAFETY ELECTRIC —Mountains

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IS HERE again and many of us are planning to spend a goodly portion of that time at one of the numerous seaside resorts while others will prefer the mountains—

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REDONDO BEACH
LONG BEACH
SEAL BEACH
HUNTINGTON BEACH
NEWPORT BEACH
BALBOA

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Ensilage Cutter Beats Them All

If you have the best silo it is the Simplex—an all one piece stave silo.
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NAIL LIES LIKE THESE!

THAT Red Cross supplies are being sold to shopkeepers by dishonest Red Cross officials.

THAT the Masonic orders have protested against allowing the Knights of Columbus to build recreation huts for soldiers.

THAT interned German prisoners are being fed five meals a day.

THAT this is "a rich man's war" or "a business man's war."

THAT farmers are profiteering.

THAT nine American warships were sunk in a disastrous engagement in the North Sea.

YOU FIND HIM in hotel lobbies, smoking compartments, clubs, offices and even in homes. He thinks it's clever to repeat "inside facts" about the war. He is a scandal-monger of the most dangerous type.

He repeats all the rumors, criticisms and lies he hears about our country's part in the war. He gives you names, places, dates. He is very plausible.

But if you pin him down, if you ask him what he really ***knows*** at first-hand, he becomes vague, non-committal, slippery. He tries to make you think that the Government can fool you, if you are willing to let it—but it can't fool him. No, siree! He's too smart.

People like that are hurting your country every day. They are playing the Kaiser's game. They are fighting against this country. They are making it harder to win the war.

Through their vanity or curiosity or ***treason*** they are helping German propagandists to sow the seeds of discontent.

For every lie that has been traced originated with a German spy. Don't forget that.

There was the one about the President's Secretary. It was said, and said again, and spread broadcast that Mr. Tumulty was convicted of treason and shot at Fort Leavenworth. That lie was easily scotched by a public statement from Mr. Tumulty himself.

But other lies are more insidious—harder to down. In another paragraph some of them are told. But they are only a few of many.

They are taken from a publication, issued by the Committee on Public Information, called:

"THE KAISERITE IN AMERICA"

101 GERMAN LIES

This little book describes the methods of Germans here and quotes 101 lies that have been nailed by a newspaper which took the trouble to run them down. It will be sent to you upon request.

Get the Facts from Washington!

Get in the fight to stamp out this malicious slander. As you travel about the country or even in your social life at home, run down these lies. Call the bluff of any one who says he has "inside information." Tell him that it's his patriotic duty to help you find the source of what he's saying.

If you find a disloyal person in your search, give his name to the Department of Justice in Washington and tell them where to find him. It is your plain and solemn duty to fight the enemy at home by stamping out these lies. Where shall we send your copy of this book? It's free!

COMMITTEE ON PUBLIC INFORMATION

8 JACKSON PLACE, WASHINGTON, D. C.

CONTRIBUTED THROUGH DIVISION OF ADVERTISING

U. S. GOV'T COMM. ON PUBLIC INFORMATION

THIS SPACE CONTRIBUTED FOR THE WINNING OF THE WAR BY

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

Shorthorns and Mendocino pastures are given place of honor on this week's cover. These pastures are on Fair Oaks Ranch at Willits and show wherein that county gathers some of its riches.

FOURTH LIBERTY LOAN

We must begin our planning for the Fourth Liberty Loan; it will be weeks yet but it's coming. It will be for double any former loan, six billion dollars, and will bear interest at four and one-quarter per cent. It will require some planning, some saving, possibly some suffering, but we must meet it.

PROTECT THE WATERSHEDS

An Encanto subscriber has written regarding the oft-made charge that cattlemen desiring better pasture in the mountains for the coming season were responsible for many of the fires in California watersheds.

It may be true that in former times cattlemen were responsible for these fires, but since fuller appreciation of the awful losses to the state from these fires has obtained we do not believe the injury from this cause is of any material extent. Besides the feeling of patriotism which our cattlemen bave there is the further protection these days afforded by the forest rangers who are during the summer season on duty in all national forests. We need more and better pastures, but more, our orchards and fields need greater water supplies, and these can only be supplied through watershed protection.

WHEATLESS DAYS

State Food Administrator Merritt in a recent address before the barley growers of the state at Davis said. "The United States and Canada will have an excess wheat supply of approximately 500,000,000 bushels, and Australia will increase that total by 150,000,000 bushels, all of which will be available if the Allied governments are able to secure bottoms to transport it.

"This means that France and England, or the government of the United States are not in the market for barley as a substitute. The supply of wheat is ample and the governments are purchasing wheat in preference to barley."

At the same time reports from the department of agriculture indicate a shortage of 40,000,000 bushels, or a cut of 891,000,000 bushels from the 931,000,000 bushels of earlier estimates, and it may be said that when that estimate was made there was a faint hope that the billion bushel mark might be reached. However, the "wheatless day abolishment" rumor persists and has been spread by one newspaper. The Los Angeles office of the food administration denies any knowledge of suspension of former wheatless rules, but Mr. Merritt is at the head of the state food administration, and, if he is correctly reported, he has a most hopeful view of America's excess wheat production.

SUGAR

Everyone in this country must save sugar. All eating houses are now licensed, and most drastic regulations are being enforced as to distribution. There have been great losses because of the submarine. The need of using all the nation's shipping to carry soldiers to France has prevented importation, and war is now making great demand on the sugar supply. Present regulations permit the purchase at one time of only two pounds of sugar for household use, and the use of three pounds per month per person. Upon signing a blank agreeing to use the sugar for canning purposes a purchase of 25 pounds may be made. Some housekeepers have not understood the full meaning of this regulation and have signed the canning card and taken home sugar which is partly used for canning and perhaps part of the supply turned over for table use. This is a violation of food regulations which may result in trouble for some of our housekeepers. As the shortage becomes more serious the regulations may be more rigorously enforced.

The violation of food regulations has not been because of disloyalty, but we believe almost invariably is due to pure thoughtlessness.

We are at war.

T. P. LUKENS

T. P. Lukens, one of California's best friends, has passed. For years he has preached the gospel of more trees and the protection of our watersheds, and he has done it as no other Californian has. Like Johnny Appleseed of the Middle Western states, Mr. Lukens has tramped California mountains with steel staff and many trees are now growing, especially in the Sierra Madre, the seed for which were placed by Mr. Lukens. But when it was found that seed so planted were not always, nor even in large percentage, successful in making covering for our mountains, he secured the adoption by the bureau of forestry of a system of forest tree nurseries which were established, and millions of young pines and other trees were produced and planted. Californians are not yet able to see the real benefits of this work which was started by Mr. Lukens, and they will not for a score, or perhaps scores, of years. But we can at least anticipate a bit of the credit which will later be given to him and those who have followed in doing his work. With his ability to see and do those things which will add much to the state's welfare, he was with it all a most lovable character and will be missed by his many California friends. The writer recalls with much pleasure tramping for many a mile in California forests when with others we tried to get from Mr. Lukens a vision of the necessity of saving California's productive valleys by reforesting and saving her burned over watersheds.

NO PLACE FOR THE SISSY

Speaking to a bunch of city boys who have an ambition to take up agricultural life J. B. Lillard, state supervisor of agricultural education in public schools, recently gave a fund of information regarding what farming is—and isn't—which we are glad to quote from:

"Farming is a man's job. The successful farmer must have experience. He must know how, when, where and whether. He must possess a good knowledge of feeding, planting, cultivating, harvesting, fencing, and a good many other things, but in addition to knowing how, when and where to plow, plant, cultivate, feed and fence, he must also know whether to plant the same crop or rotate, whether to sell or feed his crop to animals, whether to raise only one crop or several. In addition, it is desirable that, as far as possible, he know why.

"Further, the successful farmer must use good business methods. He may know how, why, when and where, but poor business management would probably break him. Recent failures in farming by professional people, even including successful teachers who were graduates of colleges, show that success in real farming depends among other things upon something not found in books.

"There is another thing which is necessary in successful farming, and that is that the man must like farming and country life. By the way, it is quite as important that his wife like it, too. Again, farming requires patience and hard work. When the days are long and hot and it is necessary to speed up in order to do the work properly and make it pay, the farmer is put to a severe test.

"Does it look easy? Good-meaning dreamers who have spent a Sunday in the country see the farm and taste its products, but have no idea of the experience, brains and hard work it took to bring the result—to make it a paying business and a good place to live.

"The farm is no place for the fellow who is a sissy, who loafs on the job, who can't take one bump and then stand up and take another one, and who can't learn something every day.

"Farming calls for all those qualities which a real man must possess. It is an art; it is a science; it is a business; it is a mode of life; it is a man's job."

This Week's War Notes

The federal government advanced to 19 railroads of the country over $6,000,000 during the month of June. This increases the advances made to various railroads to $60,509,000.

The United States transport Covington, homeward bound, was torpedoed in the war zone July 1. Six men of the crew were lost. There were no soldiers or passengers aboard.

The registration of June 5 shows 744,865 young men who have reached fighting age since June 5, 1917. New York had the greatest registration, with 69,525. California's registration was 18,834.

An offensive has been begun by the French and Italian troops in Albania. The River Voyusa has been crossed and an advance of about 15 miles made. The town of Fieri, about 18 miles north of Avlona, has been captured, and the Italian troops have extended their lines some 18 miles up the Adriatic coast.

There were launched during the past year vessels aggregating a tonnage of 1,430,793. This increased America's tonnage on July 1 to 10,040,659. The celebration of the Fourth of July launchings on the Pacific Coast was made notable by the presence of Chas. M. Schwab, head of the ship building commission.

The situation in northern Italy continues entirely satisfactory to the Allies. The Italians have administered awful punishment to the Huns, and it is estimated that since July 2 the Austro-Hungarians have lost in excess of 20,000 men. They have been trapped in the marshes along the Piave and slaughtered in great numbers, and every point along the river is now in the hands of the Italians.

On the first of July announcement was made by the secretary of war that the United States has now in France in excess of 1,000,000 troops. Some 700,000 or 800,000 of these have arrived in France since January 1. Since that date the number crossing the Atlantic monthly has increased from 46,776 during the month of January to 117,212 in April, 244,345 in May and 276,372 in June. With the newly commissioned ships increasing rapidly in number the troops sent each month will now be greatly increased.

Conditions in the interior of Austria are causing Berlin much trouble. Hungarian troops are incensed over the fact that Hungarians have been unduly slaughtered in the northern Italy drive. It is charged that Austrian and German commanders placed the Hungarians where there was the greatest danger and loss of life. Food riots have been largely subdued through the force of Ludendorf and the German troops. Careful estimates show that over 300,000 Austro-Hungarian troops have deserted since the beginning of the war. Many of these escaped to the armies of the Russians, Servians and Rumanians.

Russians are revolting from the Bolsheviki rule. During the past week Count Mirbach, German consul to Moscow, has been murdered, and there is anarchy in that city. Martial law has been declared, but the troops of the Bolsheviki are unable to enforce it. The streets are barricaded and there is much fighting from the housetops. Intervention by the Allies is generally considered as near. The demand of Berlin that the murderers of Mirbach be punished has been ignored. Troops of the Allies are still in Vladivostok but thus far have taken no action other than to guard the stores in warehouses there. It is supposed that other troops are guarding army supplies near Archangel. One thousand Chinese peasants in Chinese Turkestan have been murdered by roving bands of Bolsheviki. The charge d'affaires of the United States to Siberia has transmitted to the department of state a note expressing appreciation of President Wilson's declaration of sympathy with the Russian people.

The situation on the western front remains much as last week. The Allies are guessing as to the intention of the Teutons, and one guess, which seems to be a shrewd one, is that there is fierce dissension among the heads of the war department and that the defeat in northern Italy and the situation in Russia has complicated matters and prevents the western plunge as anticipated. However, every day sees thousands of new Yanks landed and added to the fighting force of the Allies, and big guns are being located so as to make the Allied line stronger. The French have made an advance of nearly a mile on a front of two and a half-miles south of Montdidier. On the Fourth of July Anzacs and Americans combined made a strong advance, capturing Hamel and a large section in the Somme district. This was in the nature of a surprise and resulted in the capture of a large number of German troops. The Fourth was celebrated at Washington by a great gathering at the tomb of Washington, where President Wilson made an address, said by many to have been his greatest.

Caprification and Varieties of Capri Fig

A bit of history, not ancient but wonderfully interesting, is contained in an address made some time since at a fig growers' meeting at Fresno by Geo. C. Roeding. Mr. Roeding gave some of the best of his life to establishing the fig industry in this state, and he is entitled to great credit for his persistent work. As many readers of this paper were not in this state during the earlier days of the fig industry, and as questions regarding caprification are so frequently asked, we are glad to print from the address of Mr. Roeding which tells of his own and others' experience in Asia Minor and in California.

IN THE year 1880 the San Francisco Bulletin Company, through the effort of G. P. Rixford made an importation of fig cuttings from Smyrna and Asia Minor. Later, they made a second importation, in which the late Governor Stanford actively cooperated with them. These cuttings were distributed to their subscribers, but when the trees bore and all the fruit fell off, the people who had planted them concluded that they were worthless, and the Bulletin Company was censured for its enterprise in this matter. The Bulletin people themselves were finally forced to the conclusion that they had been tricked by the wily Smyrnaites.

In the year 1885 E. W. Maslin, who owned a property at Loomis, Placer County, raised a lot of trees from seeds of the finest imported figs and planted them in orchard form. In 1889, in an address which Mr. Maslin made before the State Fruit Growers' Convention, he stated that the trees had made a wonderful growth, bore an abundance of fruit, but had all dropped off without maturing. My father, the late F. Roeding, sent the foreman of our nursery to Smyrna to investigate conditions there and to bring back a lot of cuttings. These were planted in nursery rows in 1887, and in 1888 the first orchard of 20 acres was planted. The orchard was gradually extended until in 1890 there were 60 acres. These trees were pruned, cultivated and irrigated up to 1901 without harvesting one single crop of fruit, due to the absence of the fig wasp. The perplexing difficulties which arose in connection with the introduction of the fig wasp might have been avoided, and the many years which intervened before the valuable insect, Blastophaga Grossorum, was finally established, might have been brought about much sooner had the man whom we sent to Smyrna devoted closer attention to the work he had before him instead of allowing his duties to be interfered with by other matters of a more exhilarating nature.

During all this period I faced ridicule, discouragements innumerable, and even my father, as interested as he was in the subject, tried to prevail on me to dig the trees up, and say "good bye" to my fig folly. It finally resulted in his deeding the Roeding place to me, for he feared that between the nursery business (which he regarded as the most hazardous on earth) and the fig business, that I would put him in the poor house.

In 1889, the late B. M. Lelong, secretary of the state board of horticulture, in his annual report wrote as follows about "Caprification":

"It has often been claimed that 'The fig in this state does not set, that caprification is absolutely necessary, that the seeds having no kernels fully establish this fact.' If caprification is absolutely necessary, this question arises: 'Why do figs produce and set their fruit as well as they do in this state without it?' No fruit can set without the flower be first fertilized; therefore, if our figs set their fruit, it is by the fertilization they receive from the pollen of the flowers; if there be no pollen to fertilize the female flowers, no fruit could set.

"In the fig the organs of fructification are hidden from view, therefore we cannot tell exactly when fertilization is effected, but it is supposed that it takes place when the eye assumes a pinkish hue and expands and admits a little air into the interior, where the flowers are.

"In many parts of Italy and the south of Europe in olden times cultivators paid much attention to setting the figs by the method of carprification. This practice was much believed in, but is condemned by most modern scientific writers as absurd.

"Caprification, according to the experience of practical growers, is altogether a delusion, and many of the largest plantations of the old world have continued to bear fruit without the aid of the caprifig."

On November 10, 1891, I read my first paper on the Smyrna fig, reviewed my experiences and outlined what I expected to accomplish. In the previous year, in the early summer months, I demonstrated to my own satisfaction the absolute necessity for caprification to produce the genuine Smyrna fig. I gathered pollen on the end of a wooden toothpick, forced this through the eye of a Smyrna fig, and every fig thus treated matured into fruits, while others fell off.

In the year 1891, in the month of June, I carried on the same experiment again, except that I improved on the original idea by blowing the pollen gathered from the profichi crop into the Smyrna fig, by using a glass tube drawn down to a fine point, and inserting this into the eye of a fig. The interior of the fig was not injured by this method and the result was far more satisfactory. In October, 1891, I exhibited caprificated Smyrna figs in San Francisco, and I take the liberty of quoting from an article which appeared in the Pacific Rural Press of October 10, 1891 by E. J. Wickson:

"We enjoyed on Tuesday a call from Geo. C. Roeding of the Fancher Creek Nursery, who brought samples of his Smyrna figs from goose-quill caprification; also White Adriatic figs to compare with them. All were cured and packed in good style. The White Adriatic figs were as well cured as any we have ever seen and handsomer than we supposed they could be made without processing and sulphur. They were, however, very inferior in appearance and notably so in flavor to the Smyrna figs cured in the same way. The Smyrna figs had plenty of well filled seeds, pulp of a translucent character, and with more of the true Smyrna flavor than we have yet found in a California dried fig. The White Adriatic had fewer seeds, pulp of a more opaque character, and flavor far less acceptable.

"These samples certainly showed that there is something in the cross-fertilization of the Smyrna fig at least. Mr. Roeding operated on about 150 figs this year with the pollen of the Capri fig. These perfected fruit; those not thus pollinated did not reach perfection.

"Mr. Roeding will proceed with his work in this direction, will introduce the blastophaga on his own account, and spare no pains to reach a demonstration of the proposition."

In the Year Book of the State Board of Horticulture of 1891, Mr. Lelong again held up the whole subject of "Caprification" to further ridicule. In this report the so-called male and female blastophaga were illustrated. The male happened to be the female and the female was in reality the parasite, Philotrypesis, which failed, fortunately for us, to become established when the fig wasp was introduced in 1899.

At the time Mr. Lelong's report came out, Dr. C. V. Riley was chief of the division of entomology of the United States department of agriculture, an enthusiastic believer in the ultimate success of Symrna fig culture in California, and he severely criticised Mr. Lelong later for his lack of knowledge on the subject.

In the eight years that followed, I carried on my experiments in artificial pollination by the blow pipe method. Meanwhile I continued my efforts to secure the blastophaga, and did during this period obtain live insects at several different times, but they invariably failed to establish themselves. Finally, through the the efforts of the state board of trade, and more particularly through the concerted action of E. W. Maslin, who never lost interest in the subject, although he no longer owned the place at Loomis, and with the assistance of the late B. N. Rowley, the importance of the subject to the fruit interests of California was ably presented to the Hon. James Wilson, who was then secretary of agricul-

Continued on Page 38

As the Caprifig Looks in Winter

Geo. C. Roeding examining one of the original caprifig trees. This is on Mr. Roeding's place on Fancher Creek.

Grafted Over Fig Orchard

The record of growth and other items of interest are graphically kept by liberal use of camera. Mr. Roeding takes many of these photos himself and in addition has a photographer who was at work when this Cultivator photograph was taken.

FIG. 1— Blastophaga grossorum,—*a*, adult female; *b*, head of same from below; *c*, head of same from side; *d*, male impregnating female; *e*, female issuing from gall; *f*, adult male, (after Westwood.) All greatly enlarged. *Courtesy of U. S. Department of Agriculture.*

Agricultural News Notes of the Pacific Coast

Northern California

Ione, Amador County, recently shipped 33 cars of stock cattle valued at $133,000.

Rich river lands near Sacramento are becoming great shippers of yellow onions.

Farm center meetings in Placer County: Bowman school house, 17; Roseville, 22.

Sacramento reports at least 50,000 acres of beans planted in the Sutter Basin portion of the valley.

Poultrymen are planning to make the state fair August 31 to September 8 a great gathering of poultry people.

Cattlemen of all California convened at Davis last Thursday and Friday and discussed feed and other questions as to greater meat production.

Farm centers of Shasta County are formulating plans for financing the wheat crop so that the farmer may live until marketing is possible.

Susanville, Lassen County, made its largest wool shipment in many years. It was only one car but it contained 22,000 pounds and aggregated in value $13,000.

Food Administrator Merritt has announced that he will have nothing to do with fixing the prices of barley; that the law of supply and demand will control entirely.

The University Farm at Davis will feature two courses in gas tractor handling at the short courses this fall. The first will be November 11-19 and the next November 20-22. The latter will be for experienced men only.

A number of the largest barley growers of Glenn County met at Willows and formed an association similar to the rice growers association. The idea of the association is to furnish the crop to the consumer at a living price and still receive fair return.

Shasta County farm center meetings: Churn Creek, July 12; Cottonwood, 15; Bella Vista, 17; Stillwater, 19; Whitmore, 23; Millville, 23; Palo Cedro, 24; Fall River Mills, 27; Burney-Hat Creek, 28; directors' meeting, Redding, 18.

Food Administrator Merritt referred to the need of a "Farmers Service League" at the cattlemen's meeting held recently in Davis. He suggested that the live stock man should be able to meet the grain grower and make compromise which would give both justice in the matter of prices; and to this end he thought the formation of such a league would be beneficial.

Rice growers of Butte County are concerned as to the supply of irrigation water; attempts are being made to induce the Great Western Company to let go of the waters of Lake Almanor. The flow in the Feather River is now running as low as 450 cubic feet, while it should in normal years run above 800 feet per second.

The federal food administrator for Humboldt County has found violations of the food rulings so serious that he is calling for the return of surplus sugar. He insists that sugar sold for canning purposes must be used for canning purposes or returned at once. The administrator has found that some residents have purchased as high as 400 pounds for "canning" purposes.

Central California

Another branch of the state insectary is to be installed at San Diego.

The Irrigation Districts Association of California met at Modesto June 29.

Hanford, Kings County, proposes to have a free market.

The Tulare Lake grain crop is estimated to aggregate $3,000,000 in value.

The Terra Bella tomato cannery will start about August 1.

Santa Cruz County is urging a greater number of colonies of bees.

Merced County farm bureau meetings: Planada, July 12; Amsterdam, 19; El Nido, 25; Eschscholtzia, 27.

Merced County has finished its driving and hunting campaigns on jackrabbits and recommends a general poisoning campaign.

The farm bureau cow testing association of Imperial County finds the cost for cow testing $1.50 per cow per year.

Articles of incorporation were filed at Riverside recently for the Orange Belt Honey Producers' Cooperative Exchange.

Merced County has completed its fire fighting organizations and has adopted the slogan: "The danger season is here; be careful."

A branch of the California Alfalfa Growers' Association is being discussed at Fresno, where a meeting was held July 8.

Californians are urged to increase their consumption of pink beans; we may be compelled to like them another year.

The Tulare County Growers' Association cannery at Porterville will be operated this year by the Porterville Canning Company.

Coachella Valley reports its cotton crop, which is small for this year, as in exceptionally fine condition, and it is predicted that another year will see 2000 acres planted.

Santa Cruz County farm center meetings for July: Bonnie Doon, July 12; Santa Cruz, 15; Aptos, 19; Socquel, 24; Happy Valley, 26; directors' meeting, 19, 10 a. m.

Tulare County cattle have been poisoned by eating young lush Johnson grass. It is claimed these young shoots are impregnated with hydrocyanic acid.

The officers of the Porterville Citrus Association for the coming year are: W. P. Bartlett, president; H. C. Carr, treasurer; J. A. Milligan, secretary and manager.

Tipton, Tulare County, alfalfa growers representing 3000 acres of alfalfa recently assembled to discuss matter of affiliating with the State Alfalfa Growers. Only about 1000 acreage signed up at the first meeting.

At a mass meeting held recently in San Luis Obispo charges were made that the Order of Herman's Sons had sworn allegiance to the kaiser. Later the lodge was disbanded and $500 in its treasury turned over to the home guards.

Tulare County farm bureau recently held a fat hog auction at Tulare. Most of the stock was sold to the Wilson and Cudahy Companies of Los Angeles. There were 245 head sold, prices ranging from $15.50 to $15.60, that is, for good large stock; some small stock sold as low as $14.50.

Southern California

Riverside has three canneries in operation.

Chino cannery started on July 5.

Imperial County offers a ten cent bounty on gopher pelts.

Walnut growers predict a fair to normal crop.

This year's apricot output it is predicted will break all tonnage records.

The Colorado River has passed its crest and irrigators along its banks breathe freely again.

Two canneries of the Hemet-San Jacinto Growers' Association are running on apricots.

The Yucaipa Apple Growers' Association is building a new packing house.

Yucaipa, San Bernardino County, has decided to hold an apple show next fall.

The army and navy want 3,000,000 cans of Southern California assorted jams.

Imperial County alfalfa growers are making a campaign on the alfalfa caterpillar.

It has been claimed that Los Angeles city will send out more than 500 farmerettes to aid in apricot harvest.

The Baldwin Park cannery will operate on tomatoes. It is contracting with the growers on the basis of $15 per ton.

San Bernardino County farm bureau now has 860 members in its 19 centers.

The regular annual meeting of the California Lima Bean Growers' Association was held at Oxnard, Tuesday, July 9.

Thos. C. Wallace, who has sold fertilizers for nearly a score of years to Southern California orchardists, died recently at the age of 62 years.

"Potatriots" in Orange County conducted a potato drive and found its 30 day consumption amounted to 205,000 pounds.

C. E. Sullivan, farm adviser of Imperial County, has resigned and left for the front on July 11. Assistant Farm Adviser Hertel has also resigned and entered the navy.

Members of Orange County farm centers recently held a farm center meeting at Fullerton, with adjournment to the Leffingwell Ranch where study was made of growing and packing lemons.

County Horticultural Commissioner Sharp of Riverside recently held a meeting with his inspectors and other county commissioners and discussed rodent control and other lines of horticultural work.

Colton maintains a "canteen" at its station from which free fruits and flowers are distributed to soldier boys who are daily passing through that railroad center. The fruit are contributed by producers in San Bernardino and Riverside Counties.

The Riverside County Dairymen's Association is protesting the ruling of the food administration ordering large shipments of dried sugar beet pulp to Eastern states. "We do hereby request that this beet pulp be offered for sale to dairymen of California before permitting shipment out of the state."

The Coast and General

California is making third cutting of alfalfa.

Don't shoot war pigeons; they may be army messengers.

Arizona was recently visited by extensive rains.

Arizona cotton is in bloom.

Idaho: "Rain is needed in all sections."

Washington reports that in most sections the winter wheat and barley will be fair crop. Harvest is already begun.

The spotted bean beetle is visiting the bean fields of Colorado, and an extensive spraying campaign with arsenate of zinc is recommended.

Some Eastern cheese factories are economizing by separating the butter fat from whey. They secure five pounds of fat from every 1000 pounds of whey.

With the almost impossibility of securing hemp from Russia and from Italy and of jute from India, the twine situation in this country is a serious one.

The commercial visible supply of wheat in the United States on June 1, according to the Chicago board of trade, was 1,146,000 bushels, as against 28,896,000 bushels the year before.

German regulations: "Poultry keepers are required to deliver to the government 40 eggs for each hen kept. The 1918 quota is due in September at fixed price of four cents per egg."

The 12th federal reserve district, which should have subscribed toward the war savings stamp fund about $8,000,000 monthly, subscribed only about $14,000,000 for the first six months of the campaign.

The 12th federal reserve district will produce 100,000,000 bushels of wheat, which is about 30,000,000 bushels greater than last year. Owing largely to weather conditions California will produce 6,000,000 bushels less of barley than last year.

A mysterious disease is visiting the cattle of Eastern Colorado. The cattle become totally blind and are unable to eat or drink. There is paralysis of the optic nerve and the tongue. The only way to save them is to feed artificially until fitted for market.

The director of the Gardening Union of Sweden has investigated as to lack of young fruit trees and has urged the Swedish public to save all fruit kernels which may answer for stocks for nursery trees. The country has depended in former years on Germany to supply these.

The forest service reports the lumber cut for 1917 as totalling 45,831,000,000 feet. The cutting of the immense amount called for the labor of 24,815 sawmills. The largest producer was the state of Washington with 4,500,000,000 board feet; Louisiana, second; and Oregon, third.

A decree has been issued in Switzerland which provides for compulsory crop production by all land owners. All lands must produce up to the average prior to 1914. All grain growers who fail to deliver the proper amount of grain "must pay four-fold the maximum price as indemnity for their deficiency"—and Switzerland is a republic too.

Canning Without Sugar

By W. V. Cruess

BECAUSE of the high price and scarcity of sugar for canning purposes there has arisen a demand for information upon methods of home canning by which the amount of sugar used can be reduced or by which the use of sugar is entirely obviated.

Sugar is used in canning to improve the flavor. It is not necessary for the keeping qualities of the fruit. Fruit is canned in very large quantities by commercial canneries in plain water without the addition of any sugar. This grade of fruit appears on the market as "pie fruit."

It is feasible to use several sugar substitutes or modify the process of canning in such a way that the amount of sugar needed is greatly reduced, and in some cases a very high grade product can be made without any sweetening. As a general rule, however, fruit put up without sugar is not so satisfactory as that canned in the usual way. The methods given below must, therefore, be considered as war emergency recipes and it is not expected that they will have any great value after the sugar stringency is over.

Pie Fruit in Water

Where such fruits as blackberries, loganberries, apples and other pie fruits are canned to be used later as fruit for pie making, it will not be necessary to add any sugar in the canning process. Prepare the fruit in the ordinary way for canning. Place it in the jars or cans; fill the containers with boiling hot water. If jars are used, place the rubbers and caps on the jars, but do not screw the caps down. It is a good plan to give the rubbers a preliminary boiling in a dilute baking soda solution to remove any objectionable flavors. Place the jars in a wash boiler sterilizer such as the one described in Circular 158 of the University of California agricultural experiment station. Add water to the boiler and bring the level of the water about half way up on the sides of the jars, heat the water to boiling point for 20 minutes with the lid tightly on the wash boiler. At the end of this time remove the jars and seal them. This fruit will keep indefinitely and can be used for pie making purposes. When made into pies it will be necessary of course to add sugar or honey or other sugar substitute. The amount of sugar needed in making the pie will be the same as in the process where the sugar is added to the fruit before canning, but this will distribute the cost of the sugar over a long period and the burden will seem easier to bear. This method, however, does not reduce the amount of sugar actually used in the end.

Use of Very Ripe Fruit

If fruit is allowed to become soft ripe on the tree it will acquire enough sugar on its own account to make it very palatable for canning without sugar. Soft ripe peaches, apricots and pears, especially, can be canned in a very small amount of water and will be sweet enough for dessert purposes. The method that has been found satisfactory is to place the prepared fruit in a pot with just enough water to prevent scorching. The fruit is brought to the boiling point and boiled for one or two minutes to cause shrinking. It is then packed hot in jars and sterilized at the boiling point for 15 minutes as described for pie fruit. Success lies in using very ripe fruit and in adding only the minimum amount of water. The preliminary boiling will force out the juice of the fruit, and the fruit is really canned in its own juice.

Use of Honey and Syrups

Corn syrup makes a very satisfactory sugar substitute for canning. For most fruits the syrup should be diluted about one half with water. In some cases more water is needed. For peaches, apricots, and berries, dilute Karo or other corn syrup with an equal quantity of water. For pears and cherries use two cups of water to one of the corn syrup. Pack the fruit in jars and add the hot diluted syrup and sterilize as directed for pie fruit for 20 minutes after the water has reached the boiling point. Honey and sorghum syrup can be used in a similar way. Honey is considerably sweeter than corn syrup and can therefore be diluted somewhat more with water. Honey, however, imparts its characteristic flavor to the product and unless the household likes this flavor it will be well not to can any great quantity of fruit in this way. Sorghum syrup, where available, makes a fairly satisfactory canning syrup, if diluted in the proportion of one cup of sorghum to about two cups of water. Sorghum, however, has a rather strong flavor, which would be apparent in the canned product but to many this flavor is very desirable. Other syrups can be used, but most of them are very much higher in price than cane sugar.

Use of Fruit Juices in Canning

Grape juice and apple juice have been used very successfully in university experiments in canning of fruits. The juice should be made from very ripe fruit. If apples are used, crush them as thoroughly as possible and heat them until soft; pressing out and straining the juice. If grapes are used, crush them thoroughly and press out the grapes without heating. Strain the juice as clearly as possible. The juice can be used in this natural state but it is more satisfactory if first treated with calcium carbonate or precipitated chalk. Precipitated chalk can be obtained from any drug store. To each quart of grape or apple juice add about one and one-half teaspoons of precipitated chalk. Heat the treated juice to boiling and strain through a jelly bag to remove the excess chalk. The precipitated chalk removes the acid taste of the juice and does not affect it in any other way. Prepare the fruit in the ordinary way and pack into jars and add the fruit juice. Sterilize as directed for pie fruit. This method will be of most use to home canners in the grape growing regions where grapes are cheap. It would not pay the ordinary home canner to buy high price grapes to use for this purpose. The juice from Muscat grapes imparts an extremely pleasant flavor to fruit canned in it.

Use of Baking Soda

Sugar is added to fruit mainly to disguise the tart flavor. The acidity or tartness can be reduced by the addition of a small amount of baking soda. For fruits of medium acidity about a quarter of a teaspoon can be added to a pound of fruit. For fruits of very high acidity as much as one-third or one-half a teaspoon can be used. The measurements are based on a level teaspoon; (the spoon must be leveled off with a knife edge and divided carefully). Do not use too much baking soda. The fruit must be placed in a pot with a small amount of water and the baking soda added. The fruit and water are then heated to the boiling point for a few minutes to facilitate the action of the soda upon the fruit. It will ordinarily be necessary to add with the baking soda a small amount of sugar or a sugar substitute. The use of the baking soda, however, does greatly reduce the amount of sugar necessary to produce the desired flavor. After treating in this way the fruit is placed in jars and sterilized as directed under pie fruit.

Can Home Products for Home Use

Unless home canners have a certain market for their goods, they are advised by the food administration not to attempt commercial canning. There are many difficulties in the way of disposing of small amounts of canned goods.

Home canned and preserved goods cannot be purchased or accepted as gifts for the army or navy. No governmental department is permitted to accept any article without paying for it. Supplies of this kind must be purchased in reasonably large units and must be uniform both as to ingredients and containers in order to simplify inspection and packing and guarantee the keeping quality of the goods.

However, every additional million jars or cans that are filled by housewives for home use will release an identical quantity of commercial canned goods for export. There will also be saved the labor, space on freight cars and cost of transportation that would mount up if factory-preserved foods had to be sent broadcast throughout the country, instead of being shipped in large blocks to cantonments or abroad.

Dry, can and preserve everything possible and store in every available container. If you have a surplus of produce or can put up a surplus of fruits and vegetables, share your surplus with others. Such sharing of foodstuff is not only neighborly and human but is true conservation, as it helps in the solution of the food and transportation problem. Housewives might well adopt and adapt the scout slogan; "Feed a Soldier's Family."

Storing Home Prepared Food Products

By W. V. Cruess

Cases have come to the attention of the university where home-prepared food products have spoiled because of lack of knowledge regarding their storage. The suggestions given below will be found useful.

Dried Fruits

Dried fruits should be processed by immersion in boiling water for one minute and draining before packing. If they become too moist by this process, dry a few hours in the sun after treating. The treatment is to kill insects and insect eggs. Store in insect-proof containers, such as tin boxes or heavy paper bags, or wrap in paper and store in sacks. Cloth sacks alone are not insect proof.

Dried Vegetables

Dried vegetables are more subject to insect attack than dried fruits. The method of processing given for fruits may be used, or preferably the dried vegetables may be heated thoroughly in an oven before storing in insect-tight containers.

Eggs

Where bran or sawdust is used for the storage of eggs that have been coated with water-glass, it should be dry and free from mildew or mold. The storage should be in a dry, cool place. Eggs preserved in this way keep perfectly but gradually evaporate and should be used within six months.

Vegetables in Brine

Cucumbers and other vegetables stored in brine should be well covered with the brine and effectively sealed with paraffine or other air-tight covering after fermentation is complete. This will check molding and softening. A barrel that can be filled with the brine and headed or bunged up makes a good container.

Jellies

In the warm sections of the state jellies frequently ferment. This is because they have not been boiled down sufficiently to preserve them. Under such conditions the jelly should be boiled down until it will boil at 220 degrees Fahrenheit or until it reaches 32 degrees Baume (or 60 degrees Balling) by the hydrometer test. See Circular 146 California Agriculture Experiment Station and Illustrated Food Preservation Leaflet II. Jellies may also be preserved when not boiled down so far as indicated above, if they are sealed hot in small jars with scalded rubbers and caps.

CALIFORNIA ANNUAL

The California Packing Corporation of San Francisco has issued an annual which gives the total pack, price and much other information regarding California canned and dried fruits, vegetables, nuts, beans, etc. There is much satisfaction in referring to this book, especially when it is noted that California's agricultural and mineral production, as indicated by one year's production, exceeds one-half billion.

A few items: Hay, $70,000,000; grain, $80,000,000; dried fruits and raisins, $47,000,000; citrus fruits, $48,000,000; canned fruit and vegetables, $58,000,000; one of the newest, rice, over $8,000,000; cotton, $9,000,000.

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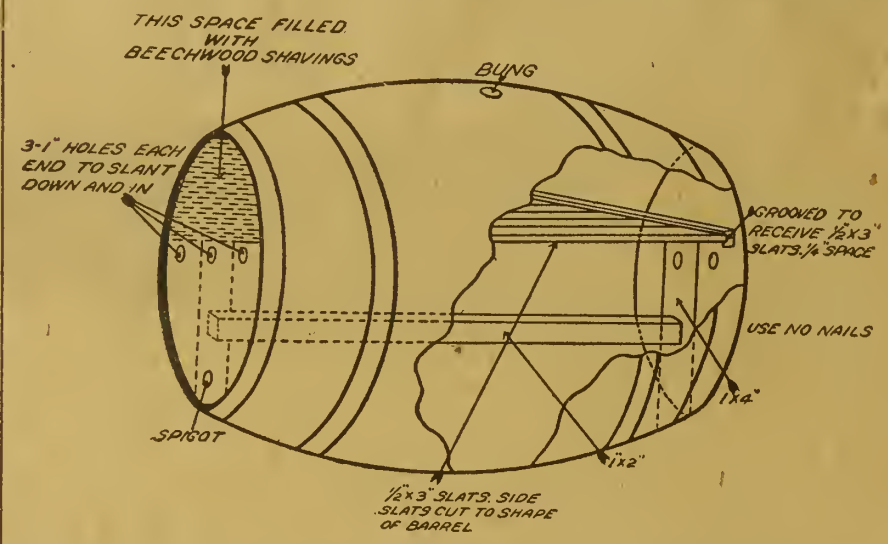
Orange Vinegar Instead of Apple Product in Citrus Regions

CULL oranges, usually allowed to decay, can be utilized by growers in the preparation of orange vinegar, a very high-grade product. It can be used by growers' families and throughout communities where citrus fruit is grown. Such communities are now supplied with vinegar made from apple waste or grain. Nearly all the citrus growing regions are so situated that this material has to be brought to them from some distance. There is no reason why orange vinegar can not be substituted wholly for the other products, according to specialists of the citrus by-products laboratory of the United States department of agriculture at Los Angeles.

Orange vinegar is easily made in barrel quantities and is sufficiently cheap to compete with cider vinegar where there is a difference of freight in favor of the orange product. The following process has been thoroughly tried out in the Los Angeles laboratory of the bureau of chemistry, and vinegar has been produced which expert buyers in the Middle West consider to be as good as the best grades of cider vinegar.


THIS SPACE FILLED WITH BEECHWOOD SHAVINGS
BUNG
3-1" HOLES EACH END TO SLANT DOWN AND IN
GROOVED TO RECEIVE ½x3" SLATS ¾" SPACE
USE NO NAILS
1x4"
SPIGOT
1x2"
½x3" SLATS. SIDE SLATS CUT TO SHAPE OF BARREL

Use Kitchen Cider Press

The process best adapted for the production of orange vinegar in barrel lots is known as the "roller process." The juice should be pressed from the oranges in an ordinary cider press, or a kitchen fruit press can be used for the purpose. Strain out any large particles of fiber or peel that may be found in the juice and add to it a pint of brewers' yeast or a half dozen cakes of compressed yeast which have been softened in orange juice. The juice should now be set aside for several days in an empty barrel, keg or tub, and kept loosely covered with a cloth in order to keep the flies from it. It is best kept at a temperature of 85 degrees Fahrenheit.

As soon as fermentation has ceased (usually from three to five days are required depending upon the temperature at the time) the juice is again strained and is ready to place in the generator.

How to Make the Generator

To make the generator, use an ordinary vinegar or whiskey barrel, and so loosen the hoops that one head can be removed from the barrel. After this is done, build a small rack to fit into the barrel in such a way that throughout its entire length for about six inches below the bung a compartment in made which can be filled with beech wood shavings or corn cobs. A quick way to do this is to build a rack of slats three inches wide by one-half inch thick, these slats being set into grooved end pieces, about one-half inch space being allowed between them. At each end this rack is supported by a two by four inch piece cut in such lengths that the rack will be at least six inches below the bung. The two by fours are usually joined at the bottom by a cross piece one by two inches. After this rack is set in place and the compartment filled with cobs or shavings the barrel is reheaded and three one-inch holes are bored in each end so that the openings come just beneath the bottom of the rack holding the shavings or corn cobs. These holes should be bored so that they slant downward. In constructing the rack and fastening it to the two by fours, grooves or dowels should be used, or, if more convenient, hard wood pegs may be utilized to hold the rack together. Iron or other metallic nails should not enter into its construction. The capacity of a generator built in this way is from 30 to 40 gallons of vinegar.

When the generator is to be used for the first time, or after it has been standing idle for any length of time, it is best to scald it thoroughly before putting it in operation. This can be done by blowing steam into the bung or giving it a good washing in hot water.

Add Small Amount of Vinegar

After the water has been thoroughly drained out, add about a quart of good vinegar (cider, malt, or orange), which has not been pasteurized. Allow the vinegar to flow over the shavings and the inside of the barrel. Now add, through the bung, the fermented juice, close the bung tightly with its wooden stopper, and plug the holes in the ends of the barrel with plugs made of ordinary raw cotton. Several times each day, if possible, but at least once each day, remove these cotton plugs and replace them with wooden plugs. Turn the barrel over so that the bung is at the bottom and shake three or four times so that the juice in the barrel will come thoroughly in contact with the beech wood shavings or corn cobs. Roll the barrel back into its original position, remove the wooden pegs and reinsert the cotton plugs. An excellent vinegar is produced within the barrel, if this treatment is kept up daily and the temperature is above 80 degrees Fahrenheit, in from 60 to 90 days.

(We have asked the laboratory in Los Angeles regarding the securing of beech wood shavings and the necessity of any such substance, and we are informed that they serve an important function in aeration. The reason for using beech wood shavings is that they are a neutral substance, giving no flavor whatever. Corn cobs are practically as good, but, unfortunately, citrus sections have small supply of either beech wood or corn cobs. The laboratory informs us that the shavings of rattan are equally good—if they can be secured. Dealers in canners' supplies on the Pacific Coast have beech wood shavings in stock. Red wood or pine shavings will not answer.—Edit.)

When the material is sufficiently acid, remove from the barrel, place in clean glass bottles, and keep tightly corked. Little difficulty is experienced in keeping this product, but it is readily sterilized and made easier to keep by heating the bottles in boiling water for 15 to 20 minutes. No sediment will deposit in the bottles if this treatment is given. Where such sediment does appear, it is best to pour off the vinegar gently and sterilize as directed above.

FARM LOANS

During the month of May 9,530,791 was loaned to farmers of the United States by the federal land banks on long time first mortgages, according to the monthly statement of the farm loan board. The federal land bank of Spokane leads in amount of loans closed, $1,511,470. The other banks closed loans in May as follows: St. Louis, $1,209,650; Houston, $1,138,716; Omaha, $1,020,800; Columbia, $916,905; New Orleans, $753,500; Wichita, $639,100; Louisville, $560,600; Baltimore, $508,600; Springfield, $465,150; Berkeley, $436,600, and St. Paul, $369,700.

On June 1 the total amount of mortgage loans placed since the establishment of the federal land banks was $101,376,378, covering 44,765 loans closed, as against $91,951,886 on April 1, covering 40,451 loans closed. During April 4969 applications were received, asking for $14,001,733. During the same period 5260 loans were approved amounting to $12,029,137. Altogether 131,599 have applied for loans under this system, aggregating $313,947,568.

The total amount loaned by Berkeley is $6,230,200.

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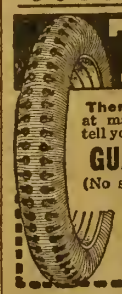

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The Avocado in Guatemala

In the report of the California Avocado Association for 1917 appears an account of Exploring Guatemale for Desirable New Avocados, written by Wilson Popenoe, agricultural explorer of the U. S. D. A. This has been deemed of sufficient interest to demand reprinting, and an exquisite illustrated booklet is now issued. It is of 44 pages, has many half tone illustrations and more of drawings of different types of avocados. Cultural and marketing methods in Guatemala are given in the first two pages of the book, and later is given a long list of varieties introduced for trial. This list is accompanied by the drawings referred to which were made by Robert N. Jones of the office of foreign seed and plant introduction.

Regarding the culture of the avocado in Guatemala Mr. Popenoe says: "So little cultural attention is given to avocados in Guatemala that it is scarcely necessary to touch upon this subject. Experience obtained in California and Florida is a better guide than the observed practices of the Guatemalans, because the latter make no systematic effort to meet the tree's cultural requirements. The method followed in cultivating coffee plantations in Antigua has been recommended for avocados in California, but I do not know what success will result from its application. It consists in clearing the ground two or three times a year with a hoe, but never cultivating deeply. The avocado trees which grow among the coffee bushes in Antiguan plantations certainly appear healthy and vigorous, but it does not necessarily follow that this method of cultivation is the best. They might even be more healthy and vigorous under another."

Fumigation Demonstration

Through the efforts of H. A. Miller, chairman of the Covina farm bureau, and J. L. Matthews of the Covina Argus, the demonstration of practical fumigation at Covina on Saturday, July 20, most certainly looks like a success in advance.

All the citrus growing communities of Southern California are being thoroughly apprised of the importance of this meeting, and there will probably be one of the largest meetings from point of attendance that has ever been arranged within the county. Arrangements are being made for the accommodation of the visitors at a noon meal.

The principal demonstrations will be held in the afternoon, beginning at two o'clock on the high school grounds. A large amount of fumigating apparatus has been secured, and with the aid of Dr. J. Eliot Coit, Dr. H. J. Quayle and other leaders in citrus culture, the practical work will be shown. How to operate a liquid gas machine will be shown in every possible way. The demonstrations will be made by practical fumigators, while the lectures will be given by Dr. Quayle.

The principal reason for the holding of this demonstration at this time is to get the ranchers themselves to learn how to generate hydrocyanic acid gas. The coming season is most assuredly going to show up a lot of scale, and there is a scarcity of experienced labor. In all probability a large amount of fumigation done this year must be done by the ranchers themselves. Everyone interested is invited to spend the day at Covina on July 20.

The Spread of the Farm Loan

By Frederic J. Haskin

There are now as many national farm loan associations as there are counties in the United States. This means that 3003 associations have been chartered by the federal farm loan board during the first year of actual operation of the 12 federal land banks. It does not, of course, mean that there is an association in every county, for not all counties are agricultural.

These associations have a membership of about 50,000 farmers, and to these men nearly a hundred million dollars have been loaned by the federal land banks. That means that in this time of food scarcity the national government has been the means of putting into the hands of the farmers who produce the food one dollar for every inhabitant of the nation. There is no place where the investor's dollar could do him more good just now.

The distribution of these farm loan associations over the map of the country is irregular, showing that the credit offered by the federal land banks flows where it is needed, acting as a regulator of interest rates, and supplementing other banking facilities where they are inadequate. In such states as Ohio, Iowa, Illinois and southern Wisconsin, where land values are high and well standardized, and where the wealth of great cities is near at hand, the farm loan associations are few. Nevertheless, the farm loan system has not been without influence even in these regions of prosperity, for there has been a decrease in the interest rates charged by the established mortgaging concerns.

A farm loan may be as small as $100 and can not exceed $10,000. The average size is $2270. There is now a vigorous agitation to have the limit raised to $25,000, as a $10,000 loan is too small for the purposes of many farmers, and the limit has checked the spread of the farm loan system in a few of the best farming regions in the country.

The average number of members in a farm loan association is 17. The minimum allowed by law is ten. Some of the associations have from 40 to 80 members.

There is no slowing down in the rate at which new associations are being formed, for the board has issued 60 new charters during the past month.

Book Review

INJURIOUS INSECTS AND USEFUL BIRDS

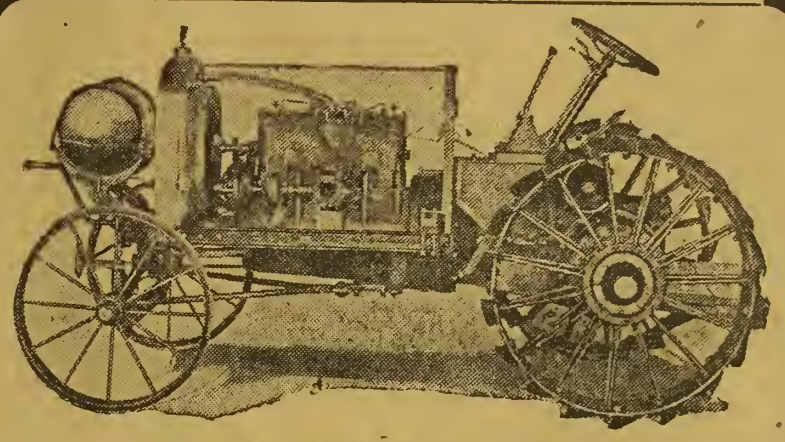
"Injurious Insects and Useful Birds, Successful Control of Farm Pests," by F. L. Washburn, professor of entomology, University of Minnesota, published by J. B. Lippincott Company, Philadelphia, $2.00 net.

This is a magnificent publication of 454 pages, 431 engravings, most of them photographic engravings, four color plates, and a great fund of information regarding entomology, with special reference to the practical or economical side. It is intended as a desk book and a reference book as well. The suggestions contained are largely the results of 21 years of work in economic entomology by the author. Yet in so large a field one must of necessity have recourse to much experience not his own, and the author has not hesitated to obtain desired information from many reliable publications; such as bulletins and circulars from the United States department of agriculture, bulletins from the Geneva and the Cornell stations and from all sections of the country. There are 21 chapters touching upon such subjects as Loss to Agriculture; Farm Practices to Lessen Insect and Rodent Injuries; Structure of Insect; Collecting and Preserving; Insecticides and Spraying; Fumigation; and other chapters touching upon insects injurious to various fruits and crops. The Relations of Birds to Agriculture is a chapter to filled with almost as much value as other chapters relating to insects.

ALFALFA GROWERS EXTENDING ORGANIZATION

J. L. Farrar, who has been manager of the Riverside Alfalfa Growers' Association, has tendered his resignation and will push the campaign for a state wide association of the California Alfalfa Growers' Association. In this association there are now 10,000 acres represented in the membership. It is hoped to increase this to 25,000 acres by the first day of August.

Tulare County is making a special pull for securing 100 per cent of its alfalfa growers in this association. The idea is that this association shall watch the interests of the alfalfa growers and extend the market for California's wonder crop.



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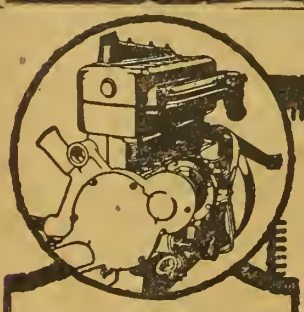

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They know from the records of their service departments—and we know from exhaustive tests—that Zerolene, correctly refined from selected California asphalt-base crude, gives perfect lubrication with least carbon deposit. Get our lubrication chart showing the correct consistency for your car.

At dealers everywhere and Standard Oil Service Stations.

STANDARD OIL COMPANY
(California)

ZEROLENE
The Standard Oil for Motor Cars

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

Grape Standardization

PACKERS and growers of grapes, county horticultural commissioners and officials of the state horticultural commission attended a conference called at Merced June 27 by State Commissioner of Horticulture G. H. Hecke. The purpose of this meeting was to discuss the provisions of the fresh fruit standardization law as applied to grapes and to outline and recommend for adoption the best, most uniform and adequate means for enforcing and applying the same to the output of the present season. It was found last year that different methods of standardizing grapes were used in different counties, and it was to provide the means to remedy this situation that this conference was held. State Viticultural Commissioner E. M. Sheehan was present and acted as the representative of the viticultural commission.

The conference was opened by Commissioner Hecke, who gave a brief summary of the results of the first season of standardization as applied to other fruits. The maturity standard of oranges, apples and pears has been noticeably improved, as is evidenced by the reports received from many of the larger markets. The profits resulting from the standardization of fruit are shared by both grower and consumer, the grower receiving better prices when the reputation of his fruit is established for high quality and uniform pack, and the consumer not being obliged to buy wormy or inferior fruit.

From the discussions which followed it was evident that serious consideration had been given this subject by all those concerned. The conclusions, placed in the concrete form of resolutions and adopted by this conference, will unquestionably result in great improvements in the work of standardizing the 1918 grape crop. The following resolutions were adopted: That every county horticultural commissioner instruct his inspectors to hold up and condemn any grapes or picking boxes showing any indication of honey dew or mealy bug; that all grapes, except Emperors and Cornichons, shall when packed be practically free from stem mildew and in no case shall infection exceed three per cent; that the test to determine the maturity shall be made from the greenest grapes.

Fresh Fruit Standardization

THE requirements of the fresh fruit standardization act as applied to packed fruit are summarized by the state commission of horticulture as follows:

All fruits must be practically free from insects and fungus diseases. In addition:

Cherries must be well colored and practically uniform in size, quality and maturity.

Peaches, apricots, pears, quinces, plums, prunes, tomatoes must be practically uniform in size, quality and maturity.

Grapes (table) must be practically uniform in quality, well matured, with a sugar content of 16 to 17 per cent.

Berries must be practically uniform in color, quality and maturity.

Cantaloupes must be fully netted, of uniform size, firm, mature, free from bruises, and practically free from aphis, honey dew and other defects.

Oranges must be substantially colored, not immature or frozen, sugar content eight to one.

Box Marking Requirements

Name and address of packer or orchard.

Name of variety. When not known must be marked "unknown," or if more than one variety is packed must be marked "mixed varieties."

Minimum weight.

Number of peaches within four.

Containers not standard when packed must be marked "irregular" and in the case of grapes must have the actual gross weight stamped thereon.

Standard cantaloupe crates must be marked "standard."

Apples

Grade marked "California Fancy" must be well grown, properly matured, of one variety only, hand picked, stems retained (except Gravensteins), well colored for variety, uniform size (variation three-eighths inch in smallest diameter allowed), well packed, free from insect pests and diseases (three per cent of any one defect, ten per cent total defects allowed), visible rot, dry rot or Baldwin spot, insect bites, bruises (except those necessarily caused in packing), sunburn and other defects, virtually free from dirt.

"B Grade" must meet same requirements except that all varieties may be packed with stems removed, need not be well colored for variety and slightly frost marked or sunburned apples will be allowed.

"C Grade" same as "B Grade" except that apples need not be well grown, hand picked, or uniform size, well packed, or be free from insect bites, bruises, frost marks, sunburn and other defects or dirt.

Box Marking

Stamps designating grade may be purchased from state commission of horticulture at one-half cent each. State inspectors are paid from fund accruing from sale of these stamps. When state stamps are not used the same grade requirement must be met and boxes stamped with proper grade in letters not less than one-half inch high.

Number in box, or net weight. A variation of five apples more or less than the number stated shall be allowed.

Variety. If variety is unknown the statement "variety unknown" must appear on box.

Name and address of packer, either first pack or repack.

Date when packed or repacked.

No misleading statements.

Apples which do not conform with the packing requirements may be sold in bulk to by-product factories or consigned to a packer for packing.

BACK NUMBERS OF CULTIVATOR

Any subscribers of the California Cultivator who may have the complete file and do not desire to keep every number prior to the year 1911, may find means of disposing of these numbers by writing to the public library of Pomona. The library, on checking up on its own files, finds many copies missing, which this office can not supply. Write to Librarian, Pomona Public Library for information as to numbers desired.

Dual-Purpose Plants

Written for California Cultivator By Ernest Braunton

THE recommendations so often made in this department for wider use of dual-purpose plants are at last bearing good fruit. From far and near come reports of intending planters of home grounds choosing ornamental trees, shrubs and vines that bear edible fruits. Several plant dealers have stated the demand for this class of plants is growing fast.

There is no doubt that Americans are and have been the most extravagant nation of all. Easily acquired virgin soil of the highest fertility caused the first settlers of this country to become prodigal in the use and disposition of agricultural products. I can remember instances of farmers who could not secure the fancied value of their corn crop calmly burning it up for winter fuel. Today the federal government would restrain them from such destruction of anv crop. The ease and low cost of production, coupled with bountiful yields, started even the usually staid and conservative farmer toward waste. The manufacturer of early days had an equally successful career, unhampered by keen competition, labor troubles, etc., incident to later days.

Now are we facing the problem of acute conservation of all foods and the elimination of the unnecessary. The latter I hold includes all plants that have merely ornamental value where a fruiting plant of equal value and similar gross appearance may be had. The classes may be well illustrated in the comparison of magnolia and avocado. I can conscientiously affirm that I have seen avocado trees that are as handsome in every way as the best magnolias. Some little consideration must be given the magnificent flowers of the latter, especially when cut from the tree, but the blossoms left on the tree are not so striking and the crop is never large enough to readily call attention to the tree, as is the case with some of flowering trees where the bloom almost hides the foliage. The magnolia needs a wet soil, being a lowland or near-marsh tree. The same amount of water necessary to successful growth, if applied to an avocado, would induce a bountiful fruit crop and a most handsome growth of foliage that would successfully meet the criticisms of all captious fault-finders. I could as easily find subjects that would fill a page of matter in the use of guavas, eugenias and carissas for hedges, and these and others of splendid appearance and good fruit such as the feijoa or Paraguay guava for shrubbery masses. For vines we could use the edible passion vine fruits, chayotes, evergreen blackberries and evergreen raspberries and a long list easily compiled. Let us have only two-purpose plants.

Use of Dead Trees

When a tree of good size dies, as trees are wont to do, study out some means of using the trunk and top in the construction of some kind of arbor or covered seat. In my own yard I had a large Monterey pine pine away. The trunk was cut off about ten feet from the ground, the top was utilized for the frame of a mushroom roof thatched with fan palm leaves. It has attracted much notice and favorable comment. Passers-by have called to examine its construction and to photograph. I shall take a snapshot at it and may prevail on the editor to illustrate a descriptive article. It shelters an octagonal seat 18 inches wide. In the meantime, do not cut such trees off at top of soil or grub them out unless ground is needed, and much needed for cultivation or other good use or uses. Let us look somewhat to comfort, convenience and outdoor attractions.

Shaving Palms

The question is often asked how best to clean palm trunks when found necessary. Personally, I do not like doctored palms, but it is sometimes quite advisable, not so much with fan palms but almost necessary with some date palms. Fan palms should have the old or dead leaves cut off but the leaf-bases should be left until they fall away or may easily be pulled off with the hands. Not so with the date palms or phoenix. The bases of these leaves sometimes persist on the trunk for a half century. In the fan palms these are short, shallow, and dry. In the date palms they are both long and wide, also thick, and behind them is a pocket filled with rotting fiber, snails, slugs, wood-lice, worms, borers, ear-wigs, and a variety of insects of all kinds as well as fungous growths. In my yard I had to "shave" a trunk to get rid of great masses of mealy bugs. The best weapon for such warfare is a sharp ax.

Response of Seeds

It is very interesting to note the ways in which seeds are elastic in their response, dependent upon age and other conditions. For 40 years I have been sowing seeds. For 14 years I have sown, each year, except the last two, large quantities of gladiolus seeds. These have been sown within a few months of harvesting and the response has been quick and voluminous, for I know how best to treat them. Recently I have sown a lot of seeds saved in 1916 and therefore two years old. I can affirm with absolute certainty that all these seeds have taken at least twice as long to germinate as one year old seeds and the response in numbers has thus far been very poor. After weeks of constant good care the tiny plants are still appearing. I could well have believed, based upon a broad experience with seeds, that all not showing ere this would have rotted. If planted earlier, in cool spring, they would have done so. Only warm soil has preserved them. Unless they finally respond with a better crop I shall conclude these seeds are not profitable to hold more than one year. This lesson is valuable as being illustrative of the action, or lack of action, of many other kinds of seeds.

A Fine Shrub

After years of observation I am more fond than ever of the abelia. As a small, neat, flowering shrub of cleanly habit and general appearance it has few rivals and no superiors. Its growth is usually about three to four feet and it bears heavy crops of dainty blush-white little bells. It thrives in any soil with little care.

JULY SCHEDULE GLENN COUNTY FARM BUREAU

15 and 16, Willows, night meeting 15; 17, Chrome, night meeting 17; 19, Plaza, night meeting, 19; 20, directors' meeting at Willows, 10 a. m.; 24, Elk Creek, day meeting 2 p. m.; 24, Grapevine, night meeting 24; 26, Larkin, night meeting 26.

Ord, first Wednesday in each month; Bayliss, first Friday; Codora, second Monday; Orland, second Wednesday; Jacinto, second Friday; Willows, third Monday; Chrome, third Wednesday; Plaza, third Friday; Elk Creek, fourth Wednesday, 2 p. m.; Grapevine, fourth Wednesday; Larkin, fourth Friday.

Directors meetings for July in the Sacramento Valley district are as follows: 15, Colusa County; 16, Sutter County; 17, Butte County; 18, Shasta County; 19, Tehama County; 20, Glenn County.

Mothers of Boys Should Know

That Boss of the Road Overalls are built to stand the hardest knocks of work and play. Genuine, indigo-blue denim that takes the tub test and comes up smiling; "stay-there" seams that can't rip out; big, man-like, *swinging pockets;* hold-fast, patent buttons; reinforced strain points—all the features that make Dad swear by *his* Boss of the Road Overalls.

All of which explains why, in these thrifty times, it is good economy to buy Boss of the Road Overalls.

If you don't know what we mean by *swinging* pockets—your dealer will gladly show you.

Look for the Bull Dog on the label. It is your protection. Never has this trade mark meant so much to you as it does today.

Buy them from your local dealer

NEUSTADTER BROS.

San Francisco Portland

MARTIN!

KING OF DITCHERDOM

Built for farm use. Equally successful for drainage or irrigation ditches. Fine for terracing and levee work. Cuts the toughest alfalfa or sweet clover roots without plowing. Leaves the ditch with smooth, hard banks. Works in any soil.

IT DOES THE BUSINESS

10 DAYS TRIAL

The name **Martin** on a ditcher is an assurance of satisfactory field work. It is significant that most Martins now go where others Martins blazed the trail. Each machine sells another—and the reason is

All Steel Reversible-Adjustable

No wheels, cogs or levers. Made in 2, 4 and 6 horse sizes. Large size fine for tractor use.

Popularity and True Merit

The Martin always has been and always will be sold **on its merits** and under a guarantee of satisfaction. More **Martins** are now in use than all other farm ditchers combined, and the facts stated in this advertisement tell why.

Get This Free Book

A Three-Cent Stamp Finds Out

Just say "send catalog" and we will mail a list of users near you, together with full particulars and many photographic reproductions.

OWENSBORO DITCHER & GRADER CO., Inc.
1570 Wazee St., Denver, Colo.

Southern California Distributors
Arnott & Company, Los Angeles

SURFACE IRRIGATION PIPE

Write for Illustrated Price List.

Can make immediate delivery

Body made from single sheet of galvanized open hearth steel, ten feet long, with extra heavy taper collar on one end and band of heavy steel on the other—making each section 10½ feet; made with lock seam (four thicknesses of steel), which gives unusual strength and durability, besides absolute proof against leakage. Manufactured by

WOOLWINE METAL PRODUCTS COMPANY
Eighth Street and Santa Fe Avenue, Los Angeles, Cal. Phones—F1088—Pico 3600

Correspondence with the advertisers in the California Cultivator will convince you that their articles will save you money.

TEAGUE QUALITY
CITRUS TREES
Orange, Lemon, Pomelo and Lime, bud selected (pedigreed) trees, subject to immediate delivery. Correspondence invited and prices cheerfully quoted.
Founded in 1889
R. M. Teague Citrus Nurseries
SAN DIMAS, CALIFORNIA

Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Tanning Leather

What is best method of making leather?—Subscriber.

Like learning a trade, getting rich and some other things, the tanning of leather requires some experience and attention to details. In a word, however, here are a few hints:

The skin should be salted on the flesh side as soon as the hide is cooled after removal, using 10 to 12 pounds to a full-sized skin. After salting roll the hide tightly. When ready for tanning place the hide in "soak", simply water to remove blood and salt. After being left in this 24 hours the tail and feet may be cut off and the flesh adhering scraped off, after which the hide should be placed in lime water. To make the lime solution take a bucket of water to each quart of lime. When thoroughly slaked and mixed, immerse the skin and allow to lie for three to four days. Thoroughly wash in cold water. Scour and pound in good soapsuds for half an hour, after which take white vitriol, alum and salt, one tablespoon each to skin, and dissolve in sufficient water to cover skin. Let remain in this 24 hours. Wring out and dry. To soften, oil with neat's foot oil or currier's oil. It may again be washed out in soapsuds and hung up until nearly dry, when it should be worked and softened. If it should remain hard and refuse to soften, repeat the soaking in suds.

This will give a raw hide which may answer. However, if it is desired to have the leather more perfectly tanned, after ringing out of the suds and before oiling, place in vessel and take of sufficient water to cover, in which has been thoroughly mixed one pint of this mixture. "For a 12 pound calf skin take terra japonica, three pounds; common salt, 2 pounds; alum, one pound. Put these in a copper kettle with sufficient water to dissolve. Boil." Pour the water above referred to, which has been mixed with a pint of this mixture, over the skin. Every 12 hours take out the skin and add another pint of the tanning mixture. Do this three days, then add the entire amount which has been left of the tanning mixture. If it is desired to darken the leather add one pound of Sicily sumac. Of course the leather should be handled often in this mixture. In addition the drying should be gradual and working with the hands as it becomes nearly dry aids in stocking the leather.

Alsike Clover

I understand alsike clover is good bee food. Is it adapted for this southern country and would the returns in hay be as good as alfalfa? How much seed to the acre is required?—Subscriber, San Diego.

In moist and cool sections alsike or Swedish clover does fairly well. While it makes a good bee pasture the great number of crops secured from alfalfa makes it also a leader as a bee pasture. Alsike produces a fine hay and one which is particularly liked by live stock. However, it would not in any sense be equal to alfalfa under California conditions. The amount of seed per acre varies from 8 to 15 pounds.

Bloody Egg Shells

Within the last three months we have lost more than a dozen hens. They lay very large eggs, and nearly every day there will be two or three bloody ones. Sometimes I have seen the blood drop quite a bit.—Subscriber, San Dimas.

Blood on the outside of the egg is due to the rupture of a blood vessel in the oviduct. In this case the rupture is probably quite near the vent and is caused by the strain of laying such large eggs. Leghorns do not usually lay extra large eggs. Doubtless yours, like many others in California, have Minorca blood. It is quite likely that the mash is too forcing, that is, contains stimulants or such a large proportion of animal meal that the hens are forced to lay more eggs than is good for them. If you will make the mash bulkier by mixing it for a while with an equal quantity of bran you may not get so many eggs but you will see less blood. Compel the hens to consume less mash by closing the hoppers part of the day, and give all the greens they will eat. —J. A. K.

Two Year Old Hens

We have White Leghorns that have laid now two years nearly. With feed high as it is, they will not pay a third year will they? Would you sell them and put the money into pullets? Our hens all lay large eggs. We had a half dozen cases of bowel trouble—our first sickness. It was offensive and they soiled their feathers and some pulled them. Only one died. Of course I isolate these. They are about well. We feed a (supposedly) good mash, "milo" or kafir for scratch, shell, charcoal, plenty of green clover, alfalfa, etc.—Subscriber. San Dimas.

Do not be in a hurry to get rid of those two year old hens. They may be your best layers. Experiments at Davis have shown that a hen frequently lays more eggs in her third year than in her second. Look your hens over carefully this summer and try to select the poor layers by color of shanks, condition of plumage, etc. When you are satisfied a hen is not going to be profitable it is time enough to get rid of her. I think the bowel trouble in your flock is probably due to either the quantity or kind of beef scrap in the mash. Making it bulkier will help this as well as the other trouble. If the mash contains stimulants as some of these patent mashes do, better try something else. — J. A. K.

Figs Suckering

Can you tell me how to prevent shoots coming on fig roots? Have a few Smyrnas which are thrifty, full of fruit, and have low crown. — Subscriber, Hemet.

There is no better way than making clean cut, and if the work is carefully done the suckers will ultimately lessen, and perhaps cease to appear as the tree grows older.

Fruit Harvesting Prices

What are farmers prices for picking peaches in the usual 40 pound orchard boxes?—Subscriber, Exeter.

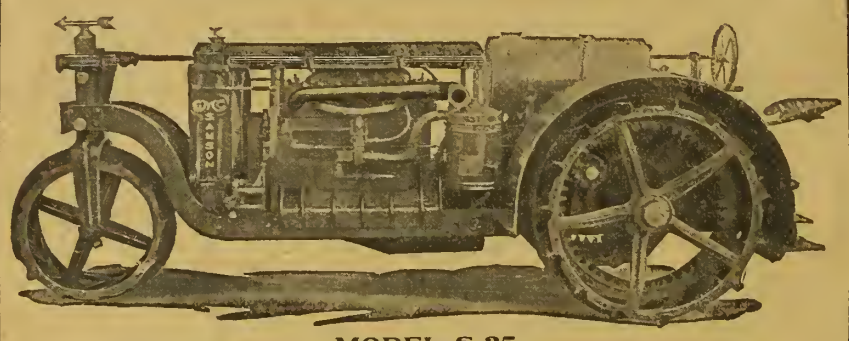
Mr. Kane of the department of standardization and inspection of the California Peach Growers' writes: "The peach season has not as yet started in this section, but general opinion seems to prevail among the growers that the price for picking peaches, by picking boxes, will be five or six cents."

Humus

What is humus? — Subscriber. Hueneme.

As usual the International Dictionary affords some excellent reading, and the best answer we can give to this question is as follows: "Humus is a brown or black material formed by the partial decomposition of vegetable or animal matter; the organic portion of soil. It absorbs moisture and ammonia from the air and is an important constituent of the soil, although it is not, as was formerly supposed, the principal source of carbon for growing plants. Humus appears

YOUR PROBLEM IS SOLVED
When You Buy a



MODEL S-25

SAMSON SIEVE-GRIP TRACTOR
GMC TRACTORS GMC TRACTORS

10 H P on the Draw Bar—25 H P on the Pulley

The Samson Sieve-Grip Tractor embodies all the features which years of painstaking effort and experience have approved. It is not an experiment. It is a demonstrated success of years' standing. Its enthusiastic owners are numbered among nearly all civilized nations on the globe.

In construction, it is very simple. In strength, all that its name implies. Built to meet the most exacting demands, day in and day out.

Its Sieve-Grip Wheels, skeleton-like in construction, give greatest traction with least weight. They do not slip. They do not pack the soil. They assist cultivation.

Its Nodust Molsto-Rizer cleanses all air entering carburetor and crank case vent. All working parts of the motor are protected from dust and grit.

Its Lubricated Roller Pinions reduce friction to a minimum. They deliver maximum power to the draw bar.

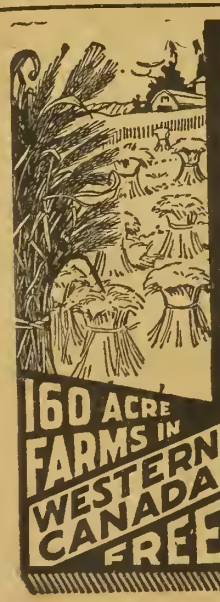
Its ball and disc type Governor assures simplicity of operation and prevents racing of the motor. Adjustment, made from the driver's seat, secures any desired set speed regardless of load, to the tractor's maximum capacity.

We court the most rigid investigation.

It will be our pleasure to give you a demonstration at any time, without obligation on your part.

Ask an owner or write us for information.

Samson Sieve-Grip Tractor Company
DIVISION OF
General Motors Corporation
STOCKTON, CALIFORNIA



Scenes of Prosperity

are common in Western Canada. The thousands of U. S. farmers who have accepted Canada's generous offer to settle on homesteads or buy farm land in her provinces have been well repaid by bountiful crops of wheat and other grains.

Where you can buy **good farm land at $15. to $30. per acre—get $2. a bushel for wheat and raise 20 to 45 bushels to the acre** you are bound to make money—that's what you can do in Western Canada.

In the provinces of Manitoba, Saskatchewan or Alberta you can get a

Homestead of 160 Acres Free

and other land at very low prices.

During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to the acre. Wonderful crops also of **Oats, Barley and Flax. Mixed Farming** is as profitable an industry as grain raising. Good schools, churches, markets convenient, climate excellent. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

GILBERT ROCHE
3-5 First St., Sheldon Block
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Canadian Government Agent.

to be a complex and varying mixture; its chemistry has not been thoroughly worked out. According to some, black humus consists of a weak acid, humic acid, which is soluble in alkalies, and humin, which is insoluble; similarily, brown humus is said to consist of ulmic acid and ulmin. Other supposed constituents of humus are crenic acid, apocrenic acid, geic acid, gein. Humous substances in solution are important solvents of rocks."

In other words humus is the whole life of the soil.

Liver Trouble of Turks

My turkeys get liver trouble at three or four months old. I feed baked corn bread, cracked corn, alfalfa and all the sour milk they can eat.—Subscriber, Owensmouth.

That trouble with the liver is proof that they have been overfed. Nearly all young turkeys die in this way, and always from the same cause, overfeeding. You cannot do much for those that are already sick, but I should cut down the ration of the well ones to green feed and sour milk with a little rolled oats chopped with the green feed once a day. When they all seem perfectly well you can begin giving grain again, but only a little, and try to give some other grain in addition to corn.—J. A. K.

Cabbage Worms

Is there a better way to rid cabbage of the small green worms than hand-picking? I have 60 nice plants but all at once they were covered with tiny worms, same color of cabbage. They did have lice but I thought I got rid of them.—Subscriber, Oxnard.

A strong dose of Paris green or arsenate of lead is best. The poisons do not injure cabbage plants. Mix with a little strong soapsuds, then add water so as to make strength of about one pound arsenate to 12 gallons water. There is no danger of carrying this poison to human beings. However, if one is timid about using a poison then use white hellebore one ounce to three or four pints of water.

Horse-radish Roots

Please tell me when to dig or use horse-radish roots. I have very nice looking plants, but when I got to use it the roots seem to be woody and have no taste at all.

There must be something wrong with your stock. It sounds like parsnips. Get a new start for good horseradish should have genuine "taste".

Small Insect

We have a small insect here that makes holes in the leaves of the plant and kills it. It is a dark brown insect and jumps like a flea but is soft and not hard like a flea.—Subscriber, Hueneme.

In a case like this if our inquirer will inclose in a pill box or small pasteboard box a few leaves with some of the insects on them or give more definite description we can answer far more intelligently. The June bug, prevalent about this time of the year, is noted for "eating holes in leaves". The leaf hopper, vastly different in size and habits, still may be a brown insect; does not eat holes in the leaves but does destroy the leaves so they drop off. The former is controlled by the use of poisons; the latter by oil emulsion. Be as explicit as possible and the Cultivator will try and make definite suggestions and answers.

Root Knot

Would like to know if I can plant new tree in the same hole where another tree with root knot has stood. Tree with root knot is not more than a foot deep in root in the ground. My intentions are to dig up all such trees, dig out the hole well, remove all this ground and leave it open to the sun and air all summer, and when I set new trees fill out with new dirt. Would that be all that is necessary or must I put some disinfectant in the hole to be sure all germs are destroyed?—Subscriber, Lemon Grove.

Disinfection of ground is almost impossible wthin economic bounds, but the steps suggested, followed by the planting of a tree free from root knot, with clean cut root ends and with no bruises on roots to permit entrance of disease germs, probably would result in bringing trees free from the disease. Unfortunately the germs of crown gall are in nearly all soils, and only care and attention can reduce its ravages.

Book Review

YEAR BOOK 1917

The Year Book of the United States department of agriculture for 1917 contains the usual report to congress made annually by the secretary, and in addition the nature of the work of the department during the year of 1917. These take only about 100 pages of the 850 page book, the remainder being given over to articles on the Peanut Industry, The Keeping of Records by the Farmer, Danger of Introducing Fruit Flies, Weed Problems, The House Rat, How the Dairy Cow Brought Prosperity, Good Roads, Cold Storage, The World's Supply of Wheat and, least interesting in appearance and most interesting when given study, the pages given over to statistics. Agriculture has advanced by leaps and bounds during the past year.

The Fruit Fly discussion is by E. A. Back and through the statements made, and especially by the use of half tone engravings, conveys graphically the danger to the fruit industry of the United States through possible introduction of this pest. Some of these photos were taken by Mr. Back in the California quarantine work.

Subscribers of the Cultivator should write to one of the California senators or to the congressman from the district in which they live and ask for copy of this publication.

War is our business; we can't win by carrying it as a side line.

THE SLACKER

If you have an idle dollar
It's a slacker,
Take it firmly by the collar—
It's a slacker.
Make it battle for the nation,
For a dollar on vacation
In the present situation
Is a slacker. —Exchange.

Four Row Bean Cultivator

For Tractor or Teams

Killefer Quality

Conserve man power—One man cultivates four rows of beans as easily as two with this tool.

This Cultivator, like most of our implements, has been developed at the request of Dealers and Ranchers for a strong, simply controlled cultivator, capable of doing their work deeper and better than possible with the lighter tools. The frame is one piece of high carbon steel without joints to work loose or sag and hold the wheels always true and in line with the rest of the machine. The double frame bar gives ample clearance between the standards and eliminates the tendency to clog in trashy ground. This frame bar has a double lifting device which holds it rigidly on both sides. A man's weight on the extreme end will not spring it out of line. The seat is set far enough back to give an unobstructed view of the four rows and the foot control is very easy on the driver.

Built to cultivate any width row from 20 inches to 36 inches wide.

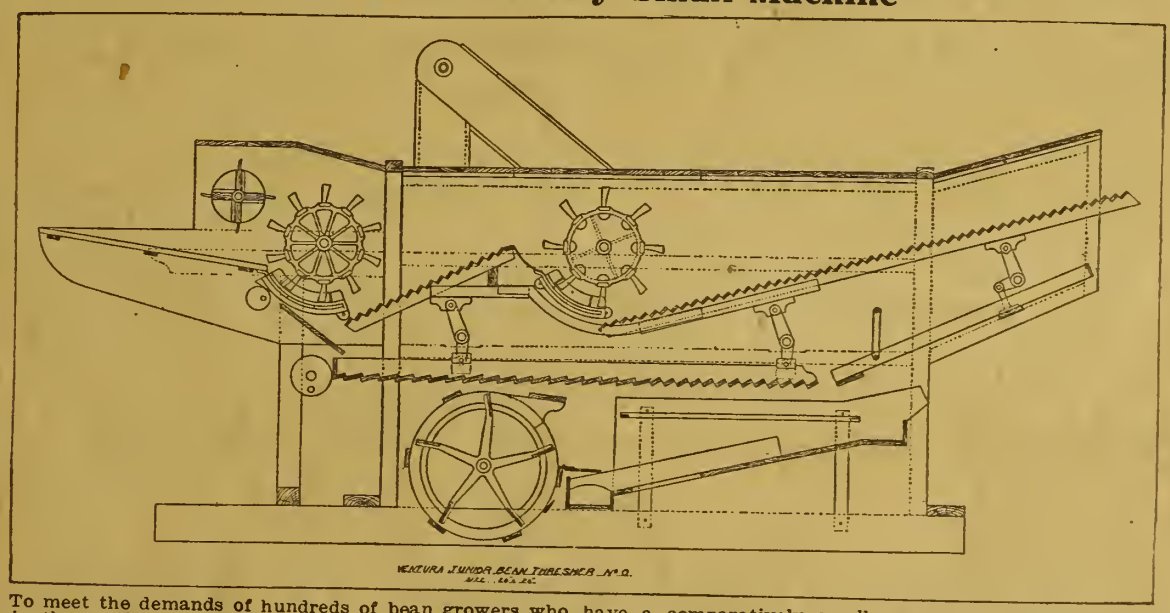
Specify Width Rows When Ordering

The Killefer Manufacturing Co.

2209-21 Santa Fe Ave. *Los Angeles, Cal.*

Two Men Can Thresh Beans With This

Don't Risk the Loss of a Valuable Bean Crop by Rain When You Can Get a Satisfactory Small Machine



To meet the demands of hundreds of bean growers who have a comparatively small acreage, too small, perhaps, to obtain the services of threshing outfits employing 40 or more men, we offer the Ventura Junior No. O Bean Thresher, a thoroughly practical and satisfactory small machine that can be operated by only two men. It is made on the same principles as our larger machines that have given satisfaction in California for the past 22 years and will thresh every variety of beans. Can be operated by tractor or gas engine and easily loaded and moved from place to place.

It is sold mounted or unmounted and with or without gas engine. This thresher is equipped with cylinder teeth as found by experience to be far superior to machines made elsewhere equipped with round iron pegs for teeth. The cylinder teeth in the Junior O can also be equipped with clips,—special Ventura devices for quick accurate adjustments.

We make six sizes of bean threshers. Write us regarding bean threshing machinery, stating what acreage and power you have and in what capacity machine you would be interested.

Our manufacturing facilities here are such that we offer our customers superior service as compared to service from the east necessitating long freight hauls on heavily loaded roads. If you want a bean thresher it would be prudent to order early and order where you know delivery can be made and where parts can be obtained on short notice.

The Ventura Manufacturing and Implement Co.,
Ventura, Calif.

Try Smoking Fish at Home

LAST summer when the big runs of mackerel were tempting fishermen on the southern coast it occurred to many housekeepers that it was possible some of the extra fish—after the family and neighbors had eaten till they could no more—might be saved by salting and smoking to help out with the meat bills, etc., etc., which are with us day and night.

Experiments were made—most of them successful. Mackerel and other fish were salted down or smoked and laid by for the following months. This year more people will take advantage of this plan. For the convenience of those interested the Cultivator gives the following instructions as to making of simple smokehouse and method of cleaning, preparing and smoking the fish:

In nearly every locality there are fishes of good food quality that seem to find no place in the ordinary domestic economy merely because they have not the most approved flavor or texture when prepared in the usual manner or because the bones are found troublesome. Among these are the bowfins, mooneyes, buffalofishes, carps and sturgeons. Yet these fishes, when cured by the simple process of smoking, are of excellent flavor and may be kept several weeks if protected from mold. As a result of smoking, the flesh acquires a firm texture that makes the removal of bones much easier than in the case of fried, baked or boiled fish.

Most persons like smoked fish. Others find it an easy taste to acquire. A word of caution should be offered. Do not judge smoked fish by the hastily, carelessly prepared product that some fishermen are willing to sell. A couple of hours' hard smoking under improper conditions may make a "smoked fish" in appearance but not in fact. Again, fish are sometimes smoked with excessive and long-continued heat until the product is dry and unattractive, and edible only when cooked. The smoking operation is simple, but thought, care and observation are required to get the most desirable results. Try smoking your own fish if the opportunity occurs; it is an interesting experience.

Construction of the Smokehouse

The smokehouse has four sides and a detachable top. The earth is the floor. The dimensions are three feet six inches by three feet six inches by seven feet high, inside measurements. The house is made of five sections—the front, back, two sides and top. Each section is separately made of two by two inch redwood lumber, covered with 26 gauge galvanized iron or painted sheet iron. The sections are held together by four one-fourth inch by four inch bolts at each vertical edge. A detachable cover is made to fit over the top of the house, one-fourth inch larger than the house. The door, two by five feet, is swung on three hinges on the front section, with its lower edge eight inches from the ground. The draft is regulated by an eight inch circular galvanized iron plate, pivoted to cover a six inch hole cut in the door. The hole in the door, which is hereafter referred to as the draft port, is flanged to prevent cutting and scratching the hands and arms.

Six inches from the top, on each side, are six one inch holes covered with slides having corresponding holes, which may be moved to regulate the outlet of smoke and steam. Corks may be used instead of the slide. On the inside of the house two one by two inch strips are nailed, seven inches and 20 inches, respectively, from the top. These strips are supports for the rods from which the fish are suspended by S hooks made from No. 10 galvanized iron wire, or, better, strips of wood pierced by nails upon which the fish are impaled.

The essentials of the smokehouse understood, various modifications may be introduced. If the ventilation is kept essentially as described, other materials may be used in the construction—wood, brick or cement.

Cleaning and Salting the Fsh

In preparation for smoking, the fish is first split along the belly from head to vent and the entrails removed. With some species, such as the bowfin, a short longitudinal cut just behind the vent is made, disclosing a dark mass (the kidney), which should be removed. The head is then severed and the fish thoroughly washed. The scales should be left on. Those fishes having a dark abdominal lining should be scrubbed with a stiff brush until the lining is removed.

If the fish are small, no further treatment is necessary before placing them in the brine. If they are large, weighing two pounds or more, they should be split down the back from the inside, severing the ribs close to the backbone, the cut being sufficiently deep so that the fish will lie flat. Extra large fish may be cut into two or more lengths and the large body pieces split as just described. This method of preparing the large fish permits the salt to penetrate more easily and insure a more evenly smoked product.

A brine is prepared by dissolving one pound of common barrel salt to each gallon of water. The fish are placed in the brine skin side down, and, as a general rule, should be left in the brine over night. On removal from the brine they are given a washing in fresh water for at least half an hour, and then placed on sloping trays or hung up to drain.

Smoking

Hang small fish to the iron cross rod by means of S hooks passing through the tail. Large fish, or those too tender to hold their own weight, may be hung by three hooks or by tying them with cord, or they may be cut into sections small enough to hang separately. Do not allow the fish to touch one another.

The fish are next to be dried. It is important that all surface moisture be removed from them, and it is well not to undertake to smoke fish on damp days unless necessary. If the weather is dry and clear, the fish may be hung in the sun and wind. In damp weather they are put in the smokehouse and dried by the fire, with the draft port and the top open. Build a fire on the floor of any fuel, except resinous materials, that may be obtainable; leave door open until fire burns freely, then close door and leave port open to creat a draft. This part of the process continues until the fish are quite dry on the surface. Unless properly dried, many of the fish will fall off the hooks and become a loss.

When smoking proper begins, replenish the fire and close the door, draft port and top. As soon as the fish begin to color open the draft port but at no time allow the fire to blaze. Smoking must be continued until the fish are properly cooked and have a dark brown color.

An advantage of the port opening is that through it the fire can be watched and replenished without opening the door. A good way to tell when the fire needs replenishing is

3 to 9 Bushels More Per Acre

California 3 to 6 bushels more per acre
Illinois 5 bushels more per acre
Kansas 3½ bushels more per acre
Iowa over 9 bushels more per acre

These are actual increases in yield per acre obtained on big farms in those states for several years by drilling instead of broadcasting. You gain both in yield and in seed saved by using a

John Deere-Van Brunt Grain Drill

Plants all the Ground—No Costly Bare Spots

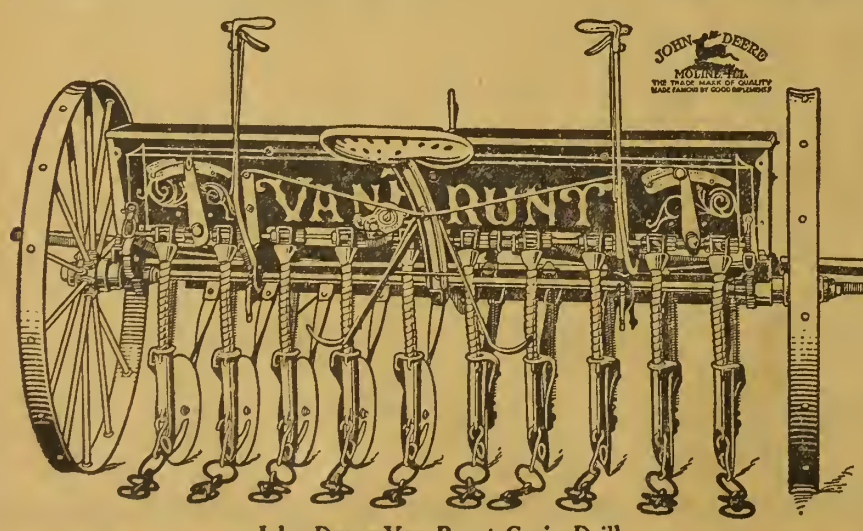
Coarse, medium size or very small seed can be planted with this drill. The force feed used on Van Brunt drills has a patented gate, adjustable to handle any size seed from alfalfa to large bearded oats, peas and beans.

All the ground is seeded—no choking up in the seed box. Change in quantity of seed by the feed shifter lever is exactly the same in each and every feed. The force-feed compels the seed to leave the seed box in even, continuous streams, but the seed is not crushed.

No clogging up—the Van Brunt successfully plants seed in mud, gumbo or trash. The seed is protected from the time it leaves the seed box until it reaches the bottom of furrow.

Disc bearings guaranteed to last the lifetime of the drill. The furrow openers, the hard-working part of any drill, are made of highest quality of steel.

Grass seed attachment can be furnished. It sows broadcast or in drills, as you desire. Van Brunt Drills are furnished in sizes and with equipment that will meet your requirements.



John Deere-Van Brunt Grain Drill

Get These Valuable Books Free

"Better Grain Yields From the Same Fields"—32 pages of valuable informationon how to select seed, how to test it, depth to plant, best method of planting, etc. Also, "Better Farm Implements and How to Use Them"—a 156 page text book on farm implements. Worth dollars.

To get these books, just state the implements in which you are interested and ask for package ***BP23.***

JOHN DEERE, Moline, Ill.

to watch the escape of smoke. When it decreases, it is time to put on more fuel. If the door of the house is opened while there is a large amount of fuel on the fire the latter may blaze up and scorch the fish. It might be well to have a small amount of sawdust at hand for this emergency; scattering a small amount over the fire will check the flame.

Fuels Used in Smoking

Any dry wood, except fat pine, may be used in smoking fish. Driftwood is excellent. The sawdust and shavings from furniture and wagon factories are good, as it is easy to regulate the smoke from them. Green wood or damp fuel of any kind is objectionable because the moisture driven out with the smoke makes the fish soggy. Corncobs are quite satisfactory fuel. Pine wood imparts a resinous flavor to the product, making it very unpalatable. A small amount of pine wood may be used with other woods when better fuels are not available in sufficient quantity.

Protection from Mold

Smoked fish are best kept in a fairly cool and dry place, to prevent molding. They should, of course, be protected from ordinary household pests. Dipping in melted paraffin is a good means of providing a protective envelope about the fish. If this practice is followed, the fish should be handled as little as possible after dipping and allowing to cool, as the paraffin may crack and chip off. When the fish is to be prepared for the table the paraffin is easily removed by immersing the fish for a few moments in hot water.

Modification of Plan for Special Purposes

Certain modifications of the small smokehouse plan to meet particular conditions are suggested in the following paragraphs:

In cold or rainy weather condensation of moisture on the underside of the roof may occur, so that the dripping of water on the fish may injure the appearance, though not the quality, of the product. This difficulty has been overcome in practice by stretching a double thickness of burlap just beneath the top. This has the double effect of reducing condensation and of absorbing the moisture as it is condensed.

In very warm weather, or in the far South, the fire on the floor often causes too high a temperature within the house to admit of satisfactory results from methods of "cold smoking." For this method, since a temperature higher than 110 degrees Fahrenheit is not permissible, it is preferable to have a fire box removed from the house, and the smoke conveyed through an underground pipe ending in an elbow joint in the bottom of the smokehouse. A common stovepipe damper is placed in the middle joint of pipe, the ordinary handle being fitted with an extension by means of which the damper is operated from above when the pipe is covered with earth. This damper is the principal fire and smoke control.

A nice feature is added by the use of a "smoke spreader," which is a rectangular galvanized iron box, one foot square and two feet high, open at the bottom. Numerous three-quarter inch holes punched in the sides and top permit the escape of smoke. This box is placed directly over the mouth of the elbow and causes an even distribution of smoke throughout the house. It serves also to prevent the scorching of fish by direct draft, if at certain stages considerable heat is applied.

AMERICAN EGYPTIAN COTTON RECOGNIZED

Standards for American Egyptian cotton, 4000 bales of which probably will be grown in California and Arizona this year, soon are to be promulgated by the United States department of agriculture, according to a statement issued by that department.

The range of grade qualities of this cotton will be covered by five grade standards, ready for sale before the marketing season of 1918-19 opens.

The statement in full, as issued by the department, is as follows:

"For some years past a special type of Egyptian cotton has been produced commercially in certain of the irrigated sections of Arizona and southeastern California. This type of cotton was formerly known commercially as Arizona Egyptian cotton, but will now be designated as American Egyptian cotton, because it is being grown in states other than Arizona. The present indications are that commercial crop of this type of cotton for the season of 1918-19 may aggregate 40,000 bales or more.

Five Grade Standards

"The department of agriculture has been cooperating with the growers in developing this new industry. One of the features of this cooperative work has been the standardization of the commercial product. Investigations made, in connection with the standardization work, have shown that it is practicable to cover the range of grade qualities of this cotton at five grade standards. These grade standards will be as follows: No. 1, or fancy; No. 2, or extra; No. 3, or choice; No. 4, or standard; No. 5, or medium.

"Preparations are now being made to promulgate officially these five grades of American Egyptian cotton and also standards for staple lengths. The standards for length will show three staple lengths which will be known as 1½, 1⅝ and 1¾. Only the first two will be available for distribution at this time.

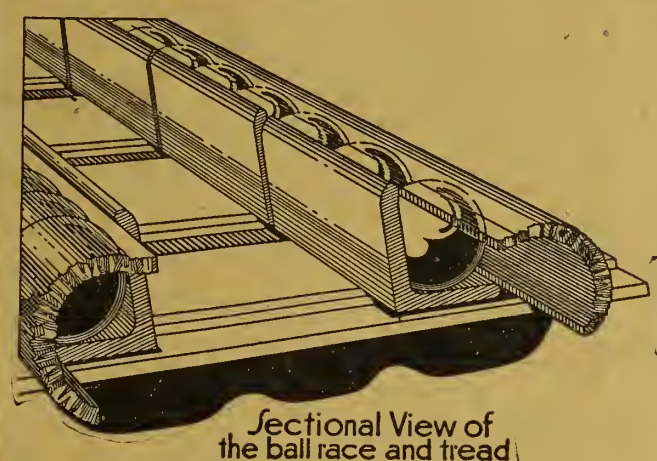
Samples for Sale

"These standards will be expressed in cotton of the variety known as Pima, which is the variety being planted almost exclusively the season of 1918. Suitable material has been collected and purchased for making up these standards of grade and length and copies of the standards will be ready for sale before the marketing season of 1918-19 opens. The price of the copies will be $5.00 for each grade box and $25 for the full set of five grades, and samples of the lengths standards will be offered for sale at $1.00 each. Any parties contemplating the purchase of a set of copies of these standards can secure the desired information by addressing Charles J. Brand, Chief Bureau of Markets, Department of Agriculture, Washington, D. C."

Low Grade Imports Taboo

The war trade board has replaced Egyptian cotton on the restricted imports list. After today importation of brown Egyptian and other low grade cottons from Egypt will be prohibited.

The importation of 80,000 bales of high grade Egyptian cotton will be permitted during the present calendar year.



Sectional View of the ball race and tread

Yuba Ball Tread Tractor

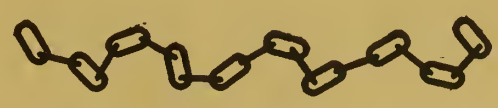
The steel balls are true to a small fraction of an inch, round as a billiard ball.

Whether the tractor runs on a level field or side hill, the thrust is the same. Whether the weight comes from the top or either side, the balls roll the same because they are perfectly round.

There is little friction—and there's no drag—the heavy machine glides on the hard steel balls.

Much force is required to drag a heavily loaded sled, but the same load on wheels is pulled by less power. Wheels **roll.**

You've seen a long freight train standing still, cars close-up. When starting it is necessary to pull the first car ahead, then the second and thus haul the whole lot, until the slack is taken up, before the last car moves.

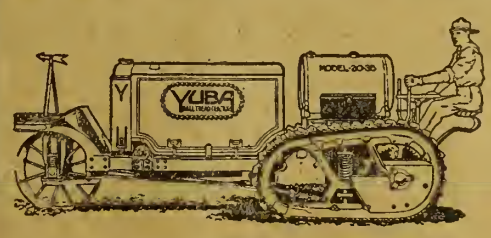


It's the same with the loose chain, power is necessary to haul the slack.

With the taut chain the power required is less—thus giving most of the power to the draw-bar—where it is wanted.

With the taut chain tread and the steel balls on which to glide, friction is reduced to a minimum.

There's economy of power in the Yuba **Ball Tread Tractor.**



Yuba Manufacturing Company

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San Francisco

Factories at
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Department B

Model 12-20
Model 20-35
Model 40-70

CAPRIFICATION

Continued from Page 27

ture of the United States department of agriculture.

The matter was referred to Dr. L. O. Howard of the division of entomology. It just happened that Walter T. Swingle, agricultural explorer of the division of seed and plant introduction of the United States department of agriculture was studying in Italy on his own account at the time. It was through his great interest in the subject and the painstaking methods that he pursued in sending Mamme figs over in the month of March in the years 1898 and 1899, that in the latter year the insect finally decided, after so many years of constant and persistent work on my part, to become domiciled in the new world, and small as it was, to make history for the fig, as well as to place California commercially as a competitor of Asia Minor in the production of the far-famed "Genuine Smyrna Fig." In the year 1901 I made a trip to Europe and Asia Minor to personally investigate fruit conditions, and more particularly to see for myself how caprification, cultural and packing methods are larried on in Smyrna. I spent two months in Asia Minor in carrying on my investigations. I was appointed a commissloner of the United States department of agriculture, and my work was very materially facilitated thereby.

I have only one more historical event to recite and then the remainder of my paper will dwell on facts directly concerning the grower.

Strange to relate, but in the year 1908, Mr. Rixford made a wonderful discovery, and he was ably supported in the theories that he advanced by Dr. Walter T. Swingle, for in an address made before the State Fruit Growers' Convention in 1910 at Stockton, these gentlemen were very positive in their declaration that this much sought after wasp, the Blastophaga Grossorum, which had caused me so many sleepless nights, so many thousands of dollars, and such a tremendous effort, had been quietly reposing, undisturbed, in the Gates tree, about five miles southwest of Ripon. The tree was planted in 1867. From 1868 to 1908 according to the statements made in the address, this tree was colonized with the blastophaga.

Shortly after this paper was read, I replied to it, fully explaining why I did not think the views expressed by the gentlemen already referred to were tangible. No reply was ever made to this article, although both Messrs. Swingle and Rixford have, from time to time reiterated their views, claiming the insect was in the Gates tree from the time they claim it had been there, but offering nothing new to substantiate their contention. I still insist, as I did then, the wasp became colonized in this tree through colonies which I personally placed in the capri fig trees in the neighborhood of Ripon and Modesto. The following is an excerpt from the article which I wrote for the California Cultivator, and which appeared in December 29, 1910, in that publication.

"Another strange feature in connection with the Gates tree is that Mr. Watkins and others at Ripon, who have trees which are not much over five miles from the Gates tree, showed no signs of infestation until colonies of wasps were actually placed in these trees.

"How different has been my own experience. The year following the introduction of the insect on my place it found its way into Roeding's Capri No. 3, growing on the vineyard of F. M. Roessler, five miles northwest of my place. I was not aware the tree was growing there, and my attention was first drawn to it by samples of figs brought to my office in the month of March 1900.

"Is it not a striking coincidence that the Gates tree should also have escaped having the parasite 'Philotrypesis' introduced into its figs?

"The version of the early settlers on the Gates Ranch reminds me very forcibly of an experience of mine while visiting the fig bazaar in Aidin, Asia Minor, in 1901. I opened a capri fig which was full of blastophaga as well as its enemy, the Philotrypesis. I showed the fig to an old Turk who had been engaged in the growing of figs all his life. He informed me with much gusto that the parasite was a most wonderful and valuable worm, in fact, the best of all.

"Poor blastophaga, you for whom I worked and strived; is it possible that the ridicule I endured, the care of a 60 acre fig orchard for a period of 14 years without any returns, the sending of a special agent to Arizona; the effort to secure one of your tribe from Mexico, through the recognized entomological explorer, Mr. Koeble; the plowing and harrowing I gave the United Etates department of agriculture to awaken an interest in this subject; the investigations by Dr. L. O. Howard and his able assistant, A. E. Schwartz, in fully elucidating the most complicated entomological and botanical problem of the day; was all for naught? Is it possible as a poor despised worm, ant and fly you have resided in Stanislaus County these many years? Oh! that I could believe it."

I am pleased to say that at last, after 30 odd years of effort, there is a genuine interest being manifested in Smyrna fig culture. The attendance at this meeting and the remarkable demand for Smyrna fig trees are conclusive evidence that Smyrna fig culture has at last come into its own.

Fundamentally, the difference between the Smyrna type of fig, as compared with those which have been grown in California for so many years, is that the Adriatic varieties mature their fruit. Although their flowers are imperfect and the seeds are hollow, the fruit nevertheless is good to eat, without the agency of the fig wasp. In the Smyrna figs unless the female flowers are pollinated they drop off without ever reaching maturity. The White Adriatic, Mission or California Black, Brown Turkey, White Endich (or Kadota) and kindred sorts, occasionally have perfect female flowers, but a good part of them are imperfect or commonly termed "mule" flowers.

The capri fig and the Smyrna stand in the relation of male and female to one another. It must be understood, although the capri fig stands in the relation of male to the edible fig, that in its several crops during the season it has male, female, mule and gall flowers. To properly understand caprification and the manner in which the pollen is carried to the female, or edible, fig, it is necessary to explain the construction of the capri fig. This fruit, known as a fig, though worthless as a food, is really a hollow inflorescence, the greater part of its wall being lined with gall flowers which are mature when the eye of the fig is opened sufficiently to permit the entrance of the wasp, while the male flowers, occupying a limited zone near the eye of the fig, mature later when the fruit is ripe. From a practical standpoint the capri fig ripens three crops annually: the first appears in March, the second in June, and the third in September. The first is known as profichi, the second as mammoni, and the third as mamme. The propagation of a fig wasp takes place in the following manner: The insect remains in the larval state in the overwintering, or mamme, figs. In the spring when the new growth starts on the capri fig the profichi figs start to grow on the new wood. Just at this time the insect has passed through its several evolutions and the female enters the young profichi figs through the eye which is apparently tightly closed at the time, although it is open sufficiently to permit her entering, and deposits her eggs in the ovaries of the gall flowers. In consequence of this puncture made by the female wasp, the female flowers enlarge after the manner of galls, and in place of its own embryo, the wasp embryo develops. In the early part of June, and continuing into july in this district, the profichi crop commences to ripen its fruits. The wingless males are the first to appear from the galls. They gnaw a hole in the gall containing the female winged wasp and impregnate her. She gnaws her way out of the gall by enlarging the opening and then crawls out of the fig, getting her body and wings covered with the pollen from the male flowers which are then mature. It is at this time that these figs are gathered and placed in either wire or strawberry baskets in the Smyrna or Calimyrna fig trees. The fruit is then the size of a marble, the female forces her way through the eye of the fig, very often losing her wing in the operation, so determined is she to gain entrance into the fruit. In this case a deception has been practiced on her, for the construction of the female flowers in the edible fig prevents her depositing her eggs, but in her strenuous efforts to prepetuate her species she dusts the female flowers with the pollen which has adhered to her body in her passage out of the capri fig, and she either perishes within the fig, being absorbed by the juices of the fruit or she crawls out and dies. As a result of her efforts a most delicious fruit is produced and is scientifically perfect, for each seed contains a germ.

Experience has demonstrated the necessity for having several varieties of capri fig trees in succession in the month of June when caprifying the Smyrna fig. Time will not permit going into details concerning varieties. As a matter of fact, the fig business, like any other branch of fruit growing carried on in a commercial way in California, will finally sift itself down to a few varieties which will become standards through the high excellence of the figs produced for the several purposes for which they may be used, viz.: fresh, canning, preserving, drying, crystallizing, etc. It is very fortunate for the future of the industry that from its inception the list has been reduced to a minimum, for should there be any expansion in the matter of varieties, the list will be increased, it is reasonable to expect, along sane lines, and new varieties will only be given consideration providing they possess well defined merits. The same line of reasoning should be applied to the capri figs, and any effort on the part of nurserymen to induce growers to devote their attention to this or that variety, because it may have a slightly different color or shape, means absolutely nothing to the man who is engaged in the industry for the purpose of earning his livelihood. At this time what is actually required to bring better returns is a variety earlier than Roeding's No. 3; larger profichi figs for the purpose of having more insects in a single fig and a variety in which the mamme figs will be even more resistant to cold than those we are now growing. My experience has been that Nos. 1, 2 and 3 answer for all practical purposes, although there are other varieties, such as Milco, on account of its late ripening; Magnissalls, the largest of all capri figs, and ripening about the middle of June; and Dr. Meyer, (E), the latest of all in my collection of 20 or more varieties, will all have their places in the list of varieties serving a practical purpose.

Among the named varieties of edible figs originally received from Smyrna I had the following: Bardajic, deriving its name from its close resemblance to the form of a water jug, and growing almost exclusively in the vicinity of the city of Smyrna, a most delicious table fig, but very subject to splitting, and, even with this serious fault eliminated, valueless for drying due to the tough skin; Cheker Injir, signifying "Sugar fig," and growing on the Island Chios; Kassaba, a most distinct type with its very broad, slightly lobed leaves and producing fruit very similar in shape to the Calimyrna, but with carnationred pulp. The fruit matures ten days earlier than the Calimyrna and makes equally as good a dried fig.

There were several unnamed varieties, none of which possessed any particular merit, among them being the Purple Smyrna, growing very dense and assuming almost the umbrella shape of the Texas Umbrella, and the Maple-leaved, which was so designated on account of its maple-like foliage.

In the Bulletin importations there were a number of mixtures, and I have often thought that the natives in taking cuttings had been particular to cut them from a seedling orchard, several of which I saw while in Asia Minor in 1901. Again, I wish to reiterate that it is not so much a matter of varieties which has any bearing on the industry as much as the developing of a fig which will be sweeter than the Calimyrna, have a thinner skin, and, above all other considerations, one that will not split.

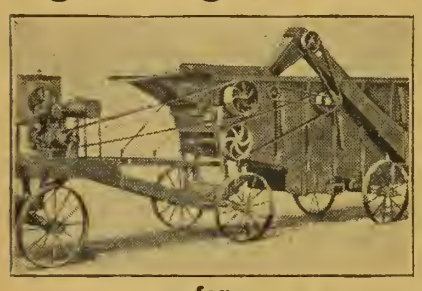
In planting an orchard the capri figs should be set in a block by themselves. Figure on having one capri fig to 20 Calimyrnas. On small holdings capri fig trees should be used as shade trees around the buildings, for they make excellent shade, with the further advantage that the buildings afford protection to the trees in the winter months, thus preventing injury to this crop from severe cold weather.

In conclusion, allow me to say that, in all fairness to myself, I consider it the duty of Messrs. Swingle and Rixford to present more conclusive evidence than they have succeeded in producing thus far in connection with the establishment of the fig wasp in the Gates tree.

I wish to add further that it is a great source of satisfaction to me to have growers claim so many superior virtues for this little wasp now, which for so many years occupied the position of an interloper in the fig industry.

Cushman

Light Weight Motors



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Equipped with Throttling Governor, Carburetor and Friction Clutch Pulley. Cooled by circulating water system, driven by engine pump.

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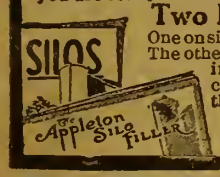

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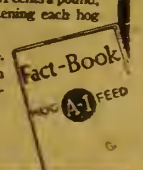

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Difficulties Confronting the Dairy Industry

IN AN ADDRESS delivered at the National Milk and Dairy Farm Exposition in New York Food Administrator Hoover referred to the complexity of the dairy situation. He said that these complexities arise from the fact that in a considerable part of the industry the raw material in feeds, the labor, land and equipment employed, are by-products of other major agricultural operations, and the commodities produced are all in different circumstances by-products to each other. This complexity is again confounded by the fact that the by-product is different in different localities and at different seasons of the year; for instance, butter and cheese may be a by-product to city milk production—they are the major product in creamery regions.

It is an industry to certain products of which attaches a peculiarly large amount of sentimental value. Fluid milk is the absolute foodstuff of our babies and is equally a necessity to very poor as to the rich. The consequence is that a rise in the price of milk may provoke more blind and fanatic opposition than any other of the food industries, not even excepting bread. Again, fluid milk is the most perishable of all the food commodities and the easiest subjected to infection and adulteration. It is an industry thus susceptible to an extraordinary degree to the varying economic winds. The varying production of roughage, the varying prices of concentrates, the lack of balance in prices of milk, butter and cheese, all make the dairyman's life an exciting, if not a merry, one.

Prior to the European war our dairy industry was practically a matter of domestic interest only. Since the war there have been increasing demands for contribution to the world's shortage of foods. This is, however, not the only pressure of war on this industry because an industry of so complex an economic character is peculiarly subject to the shocks of commercial dislocation that have penetrated into all quarters of our national life. It is these war dislocations that gave birth to the food administration, and it is with these problems that the government is called upon to deal. I should like to emphasize this point. The food administration is not a busybody, searching for opportunities to interfere in industry and trade. Its sole preoccupation is, so far as is physically possible, to soften the shocks of war that the food supplies of our own people and the Allies may be maintained. I can perhaps illustrate this by a review of only one or two war dislocations which have affected the industry and the steps taken by the food administration to ameliorate them.

At the time of the establishment of the food administration last summer we were confronted with a price level in feeding stuffs for animals that had not been witnessed in the United States since the Civil War. Heavy exports to Europe of all character of foodstuffs during the previous 12 months had drained the country of its surplus production of food supplies but had also even exhausted our normal carryover from one harvest to another. The consequence was that we entered upon the harvest of 1917 with less supply of all kinds of feeding stuffs than at any similar period in 15 years. In fact had the harvest been a total failure the human beings and the animals in this country would scarcely have survived for 60 days a situation not only pregnant with speculation and high prices, but positive national danger through lack of supplies to equalize short production in any direction.

The dairyman was caught between two forces, a low price in milk, held down by inherent opposition of the consumers, and high price in feeding stuffs and labor. No doubt in the long run if matters had been allowed to take their course, the dairy cattle would have decreased to a point where a shortage in milk supplies would have compelled the necessary increase in milk prices. Some day these milk prices would have risen to a point that would have again re-stimulated the industry and in the course of years the number of dairy cattle would have been restored and an equilibrium again established. These are not times however, when we can run the risk of sapping the root of our production and await years for its regrowth. We had all hoped for a considerable time that the unusually large promise of feeding stuffs last harvest would result in decreased prices in feeds and that the dairymen's position could have been saved without material increase in the price of milk to the consumer. We worried along until November when there developed so great a car shortage by the war demands upon the railways that it became evident that the crop would not move with sufficient rapidity to remedy feed prices before spring. We therefore determined that some action would be necessary in protection of the producer. To make matters worse, you will recollect we came into an unparalleled period of storm weather extending from the first of December until the middle of February that further paralyzed our railways and created a situation of practical famine prices of feed stuffs in those parts dependent on railway movement. By the middle of February the railways had moved 150,000,000 bushels of corn less than normal and correspondingly less quantities of all other feeding stuffs. There were immense stocks in the hands of our feeding stuffs producers but it could not. through railway strangulation, reach the consumer. We had therefore to suffer from continuously ascending prices until the railways were able to offer a freer movement. Within a month after that wider movement began to take place this spring the price levels of feeding stuffs began to fall more nearly to ratios comparable with the supplies and the outlook from now on is for more reasonable prices.

Here is therefore one issue upon which the dairy industry has been directly disrupted by the war and if we were not to witness a large selling of dairy cattle for meat, some increase in the price of milk was vital or the city milk industry would be imperilled. Proposals to increase these prices brought about con icts between producers, distributors and consumers, not only of the most acrimonious character but in which the law was invoked in various directions and practical deadlock resulted.

Furthermore, I had also long held the view that various associations amongst producers were the foundations upon which a better marketing system must arise in the United States in the interest of both producer and consumer, and that, growing out of the bitter quarrels in various parts of the country, the existence of producers' associations were being endangered. I also realized that any increase in price meant fearful hardship and suffering upon some sections of the community and furthermore that any interference with the ordinary course of trade meant a series of incidental reactions all of which would be disagreeable enough but yet none of which would be so disastrous to the community as no action at all.

In other words, like all cases of interference in the normal course of supply and demand, it became the choice of evils. The issues at stake were not only from the point of view of the feeding of our own populations but the broader issues of our reserves to meet the demands of the Allies.

The first and most immediate reaction was that with an increase in price there was a great fall in consumption and therefore a damming back of the surplus on the hands of the producer and distributer. In other words, the poorer sections of the community spent the same sum on milk and took a less quantity. There was thus the heartbreaking reaction of diminished milk feeding of our own children. That has been more or less overcome by propaganda in these sections as to the necessity for milk for children. This has led to a larger consumption. I am informed that it is now again about normal and we wish to continue the insistence as to its superior value to all foods for the little ones.

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Sire—KING KORNDYKE SADIE VALE, the only 40 pound bull that has a 40 pound daughter.

Dam—S. V. H. ALTOANA ORMSBY, a daughter of Sir Veeman Hengerveld. She made 16.70 pounds butter in seven days as a three year old right after being unloaded from the cars from the east and is capable of a much larger record.
This young fellow is a splendid individual, three-quarters white, and is a splendid buy at the PRICE $500.00.

No. 2—Born May 9, 1918

Sire—HOLLYWOOD PIETERTJE KORNDYKE, who is by Hollywood Lilith Palmyra, 11 A. R. O. daughters including a 33.44 pound three year old, and out of Pietertje Korndyke Abbekerk, 712.9 pounds milk and 35.30 pounds butter in seven days, 3235.8 pounds milk and 141.6 pounds butter in 30 days, 9300 pounds milk and 375.0 pounds butter in 90 days. As a senior four year old she made 23,874.2 pounds milk and 984.83 pounds butter in one year, and she is a granddaughter of Pontiac Korndyke.

Dam—PIETERTJE HENGERVELD CREAMELLE, 621.5 pounds milk and 30.24 pounds butter in seven days, 2648.7 pounds milk and 124.18 pounds butter in 30 days, 16,633.8 pounds milk and 691.56 pounds butter in 305 days.
The dam and sire's dam of this calf average:

Milk seven days	667.10
Butter seven days	32.77
Milk 30 days	2,942.20
Butter 30 days	132.89
Milk one year	20,254.00
Butter	838.19

(Average of yearly records includes the 305-day record of his dam and the four year old record of his sire's dam.)

This choice young fellow is about two-thirds black, and his breeding on both sides is unexcelled. We recommend this buy as a sure money maker. He will not be here long at the price, $500.

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Percherons in Canada

By Wayne Dinsmore

During the last 19 months the Percheron breeders of the United States have sold more than 1000 Percherons to Canadian buyers. Six hundred and eleven of these were purchased during the last seven months by 91 different Canadian buyers. Thirty-two purchasers were located in Alberta; four in British Columbia; 12 in Manitoba; one in New Brunswick; seven in Ontario, and 35 in Saskatchewan. Two hundred thirty-nine out of the 611 sold this past season were mares. It is believed that this constitutes a record for the exportation of any kind of pure-bred live stock to Canada. These very heavy exportations are significant of the growing popularity of Percherons in all parts of the Dominion, and of Canadians' firm belief in the prosperity in store for breeders of good draft horses.

The Percherons in America are reared by average farmers who use the mares in regular farm work. Most of the colts recorded have been registered by men who raise only one or two colts per year, as is clearly shown by the fact that the 10,508 registrations made during the last fiscal year were made by 5198 separate breeders. The distribution of breeders by states is approximately the same as distribution by registrations given in paragraph above.

Hogs Need Shade and Clean Water

Shade and clean water during the summer months are essentials to successful pork production. All kinds of hogs must have shade. Too much direct sunlight and heat is a frequent cause of hogs failing to thrive and is often the cause of hogs dying. During July and August small pigs often blister on the backs and about the ears which causes, in some cases, severe infections and bad sores.

Expensive shelter is not necessary. Shade trees provide ample protection. Where no trees exist temporary shade may be provided by the covering of a frame with canvas, under which the hogs may go for protection. Some producers build individual hog houses with sides that may be lifted to provide an increased amount of shade during the summer months. This plan furnishes shade for hogs where only a few are kept.

Clean fresh water for drinking and wallow is equally as important as, or more important than, shade. The old time wallow hole covered with scum, which was once also the drinking fountain, is no longer in favor with the successful hog feeder. Hogs must have water to drink, and if they cannot get fresh clean water in the trough or fountain they will drink where they can find it, regardless of its condition. This fact has caused some to believe that hogs prefer nothing better, but they do and will demonstrate the fact when they are able to get fresh water from the well.

The clean wallow hole is also important. Hogs may use the muddy wallow if no other is available; but, again if clean water is provided in a concrete wallow they will prefer it to the mud hole. Concrete wallows are not expensive, according to S. T. Simpson of the University of Missouri College of Agriculture, if constructed at odd times, when regular farm labor can be utilized. An excavation six by eight feet, or larger, and about 14 inches deep, walled and floored with concrete and filled with water will prove profitable attraction to the hogs on hot summer days.

New State Jersey Record

The Register of Merit certificate for the Jersey cow Interested Jap's Santa, 296928, owned by the University of California, has just been received from the American Jersey Cattle Club, showing that she produced during the lactation period ending January 3, 1918, 13,308.5 pounds milk and 805.72 pounds butter fat, average per cent 6.05, at four years, two months at beginning of test.

The record was made under a great handicap. About the middle of the lactation period, during the months of August and September, the cow suffered from a throat trouble which for some time threatened to prove fatal. For nearly three weeks she did not eat and dropped from 35 to 12 pounds of milk per day during this period. However, she gradually recovered and her flow of milk increased again to about 20 pounds of milk a day during October to December. But for this setback, her production for the year would very likely have exceeded 850 pounds of butterfat.

This is the third Register of Merit record Santa has made. During her first lactation period she produced 5838.9 pounds of milk and 353.71 pounds of butterfat at one year, nine

Three Daughters of Gertie's Lad

months at beginning of the record period. During the second lactation period she produced 9052.5 pounds of milk and 588.16 pounds of butterfat at two years, 11 months old. The three Register of Merit records, therefore, exceeded the requirements of the American Jersey Cattle Club by 41, 107 and 140 per cent, respectively, for the first, second and third lactation periods. If she continues to improve on the requirements she will make her way near the top of the record of Jersey cows in the country. Her last record places her first among California Jerseys and fifth in her class for Jerseys in the United States, the present leader in class six being Sophia's Adora, 2995994, with a record of 888.0 pounds butterfat.

Control Sheep Pests

The gad fly, or grub-in-the-head, the sheep mange mite, and the sheep "tick" are the three most important insect pests of sheep. The gad fly is related to the bot and warble flies, and lays its eggs, or young maggots, in the nostrils of the sheep. The maggots work into the nasal passage, where, in severe cases, they cause a weakening of the sheep, and later death. The pest may become more abundant from year to year where the same pastures are used and where no attempt is made to check it.

The sheep fear the fly. Provide shade in the pasture and scatter straw around, or keep the sheep's noses smeared with tar or other repellent. The fly attacks the sheep only in bright sunshine, and when the animal runs for shade or sticks its nose into the straw or bushes it escapes the pest. Sheep will keep tar on their noses to some extent if the repellent is smeared around auger holes in a board or log which contain salt.

In case of a large flock, dipping is the most practical means of controlling scab and ticks, according to Leonard Haseman of the University of Missouri Colleg of Agriculture. Where only a few sheep are to be treated, stock dip, or oil used sparingly, will keep the animals free.

Concrete Floors Conserve Feed

With the scarcity of feed, rising prices, and the great necessity for maximum production, no feeder can afford to do without a good feeding floor. There is a great waste of feed when the cattle and hog feeding lots are poorly drained and are a mass of mud. The advantages of a paved lot and feeding floor are: The stock make greater gains, feed is saved, feeding is made easier, manure is saved, sanitation is improved, thereby reducing disease, and clean animals usually bring better prices.

The cost of the average feeding floor, even at the present prices, should not be more than ten cents a square foot. On many farms it can be built for less cost, because often all material except cement is at hand. Any concrete worker who can build a satisfactory sidewalk should be able to construct a feeding floor. At the present price of meat, the sale of one hog will pay for feeding floor space for from 30 to 50 head. Investigation shows that the floor will often pay for itself in one feeding season.

Farm Labor

Up to the present moment all crops are being harvested with but little loss as far as we can learn, excepting some large acreages of asparagus for lack of labor.

Many thousands of acres of crops were not planted because no labor was in sight to make and harvest the same, which otherwise might have contributed to help win the war.

The women have responded well for the orchard and fruit work. They are proving effective and show a fine spirit.

The grain harvest is progressing well. We do not know of any machines standing idle for lack of men to run them. However, the very light crop in many sections of the state, many fields not being cut at all, must not be lost sight of.

Rice fields are now beginning to need attention as to cutting out water grass and this is something that has had to be done hertofore by Japanese and Hindoos. Most of these laborers are farming for themselves this year, many of them preferring to ride around in autos which they earned last year by inordinate wages and by big crops where they had leased land, rather than to be doing rice work.

If any fruit farmer is in need of labor the Woman's Land Army stands ready to furnish it. If all farmers would call on the free public employment bureaus when in need of laborers they would find the state and the United States government service both ready to aid them.—J. P. Dargitz.

Stanislaus Princess Cleopatra

A cow on Rosamaines Ranch owned by Stalder Brothers. She has seven day record at two years 11 months of 406.3 pounds milk, 17.022 butter; at three years 11 months, 28 days, 513.9 milk, 31.41 butter. Thirty day record at same age, 2299.7 milk; 119.446 butter; at four years, 11 months, 14 days, 2050.10 milk, 128.171 butter.

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His dam has an A. R. record of 12,286.3 pounds of milk and 676.31 pounds of butter fat, average 5.5 per cent, made at ten years of age.

He combines the blood lines of many of the great members of the breed and traces 25 per cent to Imp. Masher's Galore and 12½ per cent to Governor of the Chene.

He is a show bull and is backed up by production records. Inquire of

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Citrus Nurseries, Murphy Oil Company East Whittier, California. Selected stock for sale; inspection invited.

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400 acre stock and grain ranch 3 miles Pleasant Valley R. R. station, Mariposa County, California; 100 acres cleared and tillable, nearly all of the 400 acres could be farmed if cleared of the large oak and other trees, wood sells for $12 per cord at station, 3 and 6 room house, large barn, and out buildings, black smith shop and tools, ranch fenced and cross fenced, part hog tight, hogs never have cholera here, family orchard and garden irrigated from springs. Average rainfall 29.88 inches; grapes, olives, almonds, etc. grow without irrigation, feed in pastures and free outside range adjoining knee high, elevation 1500, no alkali or hard pan, ½ mile school and church, $30 per acre including 300 goats, 3 horses, 3 head cattle, turkeys and chickens and all farm implements. $3000 cash, balance long time 7 per cent. Fred B. Palmer, owner, Coulterville, California.

Attention Land Buyers!
Here's an excellent proposition: 40 acre farms selling for $15 to $25 per acre, long time payments, 6 per cent interest, in the best agricultural part of Snohomish County, where you have all the modern conveniences, paved roads, railways, schools, churches, mills and factories. This district has proven its worth by the many successful farmers now located there. We also have some beautiful water front 10 acre tracts. OPPORTUNITY knocks at every man's door ONCE, but believe me, it does not continue to knock forever nor does it pound the door down. For further information address the owners, BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

40 Acres Near Manteca—20 in nine year old almonds, 20 in ten year old vineyard interplanted with four year old almonds. Crop last year was $5,300. This year's crop estimated $7,000. Price before August 1st with crop, only $13,000, half cash, balance to suit. Walter Buchanan, Ripon, California.

For Sale—5¾ acres good land, grow anything; 12-inch artesian well, 50-inch water, 900 ft. cement pipe; 5-room house; small barn. Fine climate. Nice all year round. $4,000.00. Terms if taken at once. Owner Paul McKaughan, No. 31, Hueneme, California. Home 6923.

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Sundries, cheapest in town; material guaranteed. Office DEMMITT CO., 120 No. Main, upstairs. Yards 816 Yale. Phone 15191, Los Angeles.

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Corn, Sorghum, Sudan Grass, Mangel beets and all other kinds of seeds. Immediate delivery. C. C. Morse & Co., 727 Front street, San Francisco.

Sudan Grass Seed, first quality. 17½c per pound. Wm. Ritchie, Arlington, California.

Wanted — Any amount of Pinto beans. Send sample and price. Clay Folsom, Gatesville, Texas.

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Wanted—Partner with $2.000.00 in blacksmith shop, garage and hardware store. Work for 3 men in blacksmith shop the year round. Blacksmith or wheelwright. A. Witt, Paige, Tulare Co., California.

Wanted—Position on orange grove by experienced hand. Would like good accommodations. Geo. Soules, Panama Hotel, 403 5th St., Los Angeles.

Want to Hear From Owner of farm or fruit ranch for sale. O. O. MATTSON, St. Paul, Minnesota.

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For Sale—Sheep. 60 old grade Rambouillet ewes, all producers, $8.00 each; lots to suit. 1313 Garfield Ave., South Pasadena.

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Guernseys—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., California.

Two Registered Holstein Bull Calves out of A. R. O. cows with high milk and butter records. Ten and seven months old. Fine individuals. Will sell at a bargain to make room. Call or write. California George Junior Republic, Chino, California.

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Pedigreed Bull Calves, Registered $50.00, unregistered $25.00. Service bulls $75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, California.

For Sale—Six registered, pure bred Holstein bull calves. Nice straight individuals ranging in age from two weeks to one year old. Price $50.00 to $125.00. Address Laurel Dairy, R. F. D. No. 1, Box 17, San Luis Obispo, California.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, California.

Registered Shorthorns, cows with calves at foot, yearling heifers and bulls for sale. Fair Oaks Ranch, Willits, California.

Ayrshires (registered — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

Elkhorn Farm Ayrshires—For sale young bulls of exceptional breeding and individuality. J. Henry Meyer, R. D. 2, Box 82, Watsonville, California.

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Fall Chicks For Sale—400,000 S. C. White Leghorn chicks from free range Hoganized stock only, for delivery from July to December, at very reasonable prices. Fall chicks are most profitable—broilers in ten weeks, pullets lay at five months. We guarantee safe delivery of all chicks to destination. Shipped safely anywhere West of the Rockies. No money in advance, pay on delivery. Special prices on 500 and 1000 lots. Finest hatchery in the world. Established over twenty years. Further information write Must Hatch Incubator Company, 424 Seventh Street, Petaluma, California.

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Wanted—To buy 50 Rhode Island Red Pullets. Wilshire 2638. 714 Central Bldg., Los Angeles.

Eastman's Bred-to-Lay Barred Plymouth Rocks. Hatching eggs. Fairmead Poultry Farm, Fairmead, California.

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A few fall boars left by Royal Superbus—also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
A. B. HUMPHREY,
Escalon, San Joaquin County, California.

Poland-Chinas—Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair 1916 and sire of the 1917 State Fair grand champion or I. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale I. Marsh, Modesto, California.

"Billiken" Chester Whites — The Easy Feeding Mellow Type. All bred sows and bred gilts are gone. Have 15 gilts that were farrowed in May, 1917, that will be bred for September farrows. These gilts are all sired by "Billiken." One young service boar that is just 13 months old. C. B. Cunningham, Mills, California.

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Duroc-Jerseys—A few spring boars, outstanding individuals, sired by Johnson's Defender and out of State Fair winning sows, for sale. Frederick M. Johnson, Napa.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Callstoga, Cal.

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Large Type Poland Chinas are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, California.

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Registered Durocs of the big type—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, California.

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War is an ugly thing but a German peace is uglier—Russian farmers are producing German food.

The Case for Pure Breds

Written for California Cultivator By Jean A. Koethen

ALL breeding is based on the principle that like produces like. The breeder who starts with two birds, the best hen and the best cockerel he can find, has the foundation for a flock of splendid, line-bred birds, some of them better, perhaps, than the parents, and all approximating in type and size and color the original birds. This principle is the foundation of the splendid work that has been done by fanciers the last 20 years, and is responsible for the development of millions of heavy-laying White Leghorns in commercial flocks.

No one questions the fact that like produces like in the fancy, but there are still not a few amateurs, farmers and back-lot poultry keepers who argue. "I don't want anything fancy. Just plain chickens that will lay eggs for me. If I choose to mate a Barred Rock hen to a Rhode Island Red male, I shall get eggs, and that is all I want." Such reasoning is all right if the premises are all right, but are they? Is a mating of Rock to Red sure to produce eggs and to go on producing eggs generation after generation?

Up at the Oregon experiment station they were not quite satisfied with their Leghorn hens. There seemed to be a lack of vigor which was not conducive to the highest production. To remedy this, Professor Dryden mated Leghorn with Barred Rock, but there he stopped in his outcrossing. The offspring of this mating, that is, the best of them, were mated back to the original Leghorn stock for several successive years. The result is that the Oregons, as they are called, are a little larger than the ordinary Leghorn and more prolific, but in looks, and really in breed, they are White Leghorns. That single infusion of Barred Rock blood gave the size and vigor required without change in appearance or character. The same thing has been done in this state with Leghorns and Minorcas. Many California Leghorns have Minorca blood, but they are still Leghorns. Nearly every known breed today is the result of outcrossing. William Cook, the originator of the Orpingtons, crossed and recrossed before he got what he wanted, but he knew what he wanted, and he knew how to outcross without destroying the original blood lines.

Now what happens when a Rock is mated to a Red? Gregory Mendel, a German monk of the nineteenth century, spent many years studying the cross-fertilization of peas, and discovered this law: that when two individuals of types A and B are mated the offspring will resemble the parents in the proportion 25 A, 50 AB, 25 B. That is, in 100 fertilizations, 25 will follow the mother, 25 the father, and 50 will be mixed. If one could be sure in mating Rock and Red that the eggs he incubated would be those which followed either parent, crossing would not be such a gamble, but the fact that there will be twice as many hybrids as pure-breds makes it almost certain that the offspring of the outcross will be mainly hybrids. If these hybrids are mated back to either parent and no more outcrosses are made, the stain is soon removed and the breed continues pure Rock or Red, as the case may be, but when these hybrids of the first generation are mated to one another all the results of years of mating and breeding are destroyed and you have just mongrels, nothing more.

It is easy to see how color and type may be destroyed in this way, but the effect on egg production is not quite so obvious. The first outcross usually increases vigor and stimulates egg production to a certain extent. The hens of the second hybrid generation may lay about as well as the pure-bred parent stock. In the third generation, unless a pure-bred male is brought in to bring the stock back to some standard, there must be deterioration. The trouble is, so much less attention has been paid to breeding for eggs than has been given to breeding for size and color that there is no inherent tendency to break up. This is why we so frequently hear of some disreputable old hen of no breed or color that is outlaying all her pure-bred sisters. Mongrels are not as good layers as pure-breds that have been bred for eggs. When you trust to luck, as the average amateur does, the lightning may strike anywhere.

Eggs aside, the mongrel has no case at all beside the pure-bred bird, for no matter how you breed you never get anywhere. This year your hens lay. Next year they do not. Why? "How should I know?" growls the advocate of mongrelism. There is only one reason. Like produces like. Mate mongrels promiscuously and you are upsetting what little is left of the original blood lines. If there are any good layers, it is because you have accidentally mated correctly.

There is no more useful fad than the culture of poultry. Beautiful hens are a joy forever, and there is the greatest satisfaction in taking a good breed and improving it. You know that you are not only producing food but in building up a strain of vigorous, prolific birds you are contributing something to the sum total of human progress. It is in this way that the live stock industry has been built up. Why should the poultry industry lag behind?

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Egg Laying Contest

Report for the thirty-fourth week ending June 26.

Storrs, Connecticut, June 27, 1918. In the thirty-fourth week of the laying contest at Storrs the total production of all pens amounted to 3994 eggs, or a yield of 57 per cent. First place for the week was won by a pen of White Leghorns from Hollywood, Washington, with a production of 59 eggs. J. O. LeFevre's White Leghorns, from New Platz, New York, were second with 55 eggs, and Archie R. Colburn's Rhode Island Reds from Hollis, New Hampshire, were third with 54 eggs. Fourth place was hotly contested, their being five pens that each laid 53 eggs for the week. These comprised Barred Rocks from New York, White Leghorns from New York, New Jersey and Pennsylvania, and Oregons from the agricultural college at Corvallis, Oregon.

In reporting the thirty-second week of the contest attention was called to the fact that the Oregons just mentioned were giving the leading pen a run for its money. During the past three weeks this pen has gained a total of 22 eggs on the leaders, which is practically an egg a day. If they continue to gain at this rate they will be just three weeks getting into first place.

With the coming of the hot weather season the poultryman's problem is not so much how to get more eggs this week than he did last, but rather to recognize the fact that the hens will yield less eggs from this time on to the end of the laying season. Good care and management during the summer means that the falling off in yield should take place gradually instead of abruptly.

The three best pens in each of the principal varieties are as follows:

Barred Plymouth Rocks

Jules F. Francais, 1359; Tom J. Adamson, 1292: Richard Allen, 1280.

White Wyandottes

Obed G. Knight, 1443; F. W. Harris, 1243; Brayman Farm, 1234.

Rhode Island Reds

Richard Allen, 1341; Pinecrest Orchards. 1221; Allan's Hardtobeat Reds, 1131.

White Leghorns

J. O. LeFevre, 1329; Braeside Poultry Farm, 1303; Hollywood Farm, 1301.

Miscellaneous

Oregon Agricultural College (Oregons), 1422; H. P. Cloyes (Buff Wyandottes), 1224; Cook & Porter (Buff Wyandottes), 1177.

THE CALIFORNIA JAY AS THE KAISER'S ALLY

Written for California Cultivator By R. H. Vogt

Poultrymen in a good many sections of the country are greatly annoyed by the depredations of the California jay, whose ravenous appetite for eggs and young chickens not only makes him a nuisance but causes him to destroy a lot of the profits that should go to the poultryman as well as to eat the food that should help supply us and our allies.

According to the reports from some sections, young chicks as old as six weeks have been killed by this robber.

That these birds are not consciously giving aid and comfort to the enemy, but are only living true to species, we can readily see by reading the "habits and economic status" of the California jay as printed in the Farmer's Bulletin No. 513, prepared by the bureau of biological survey. Here we read:

"Robbing the nests of smaller birds is a favorite pastime, and he is a persistent spy upon domestic fowls and well knows the meaning of the cackle of a hen. Not only does he steal eggs but he kills young chicks. The insect food of this jay constitutes about one-tenth of its annual sustenance. The inclusion of grasshoppers and caterpillars makes this part of the bird's food in its favor. But the remainder of its animal diet includes altogether too large a proportion of beneficial birds and their eggs, and in this respect it appears to be worse than its Eastern relative, the blue jay.

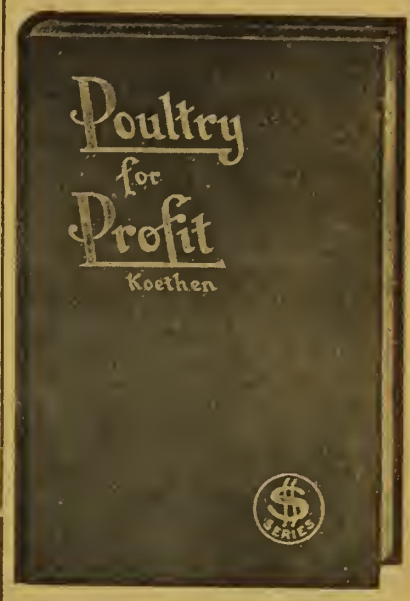
"While its vegetable food is composed largely of waste, at times its liking for cultivated fruit and green makes it a most unwelcome visitor to the orchard and farm.

"In conclusion it may be said that over much of its range this jay is too abundant for the best interests of agriculture and horticulture."

ORPINGTON CLUB YEAR BOOK

The Orpington Club of California has issued the year book for 1918. Officers of the association are: President, A. G. Goodacre; vice president, P. W. Likins; second vice president, A. J. Hoffman, Jr., secretary, L. C. Geiser, San Gabriel.

Poultry can be made to Pay



THERE are two methods of gaining knowledge, necessary to make poultry a success; experience—which is a long, drawn out, expensive road and the one too commonly used. Another method is by the careful studying of books written by practical poultry people who have made mistakes and successes and are willing to give this information in order that you may take the short road to poultry success.

Poultry for Profit

BY

Jean A. Koethen

Graduate of University of Calif.

Gives more practical knowledge of every branch of the poultry business in a more concise and simple manner than any similar book published. With the knowledge gained by a study of this work experience in the poultry business is not as necessary. Through its guidance obstacles are overcome before it is too late.

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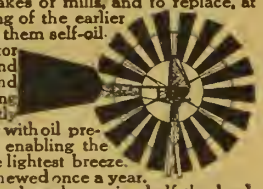

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Household Department

THE SOLDIER'S MOTHER

He was so beautiful—my baby son..
His sun-kissed curls clung close around his head,
His deep blue eyes looked trustingly in mine.
I did my best to keep his beauty fair
And fresh and clean and dainty, for I knew
I never could be satisfied with less.

He was so strong and well, my little son!
I gave my days and nights to keep him so—
Called in fresh air and sunlight to my aid,
Good food and play, all healthful things of life.
I wanted physical perfection, for
I never could be satisfied with less.

He was so bright and clever, my big son!
I sent him to the very best of schools,
Denying self that he might know no lack
Of opportunity to do his best.
Or feel no door of progress closed to him.
I never could be satisfied with less.

And yet—but now—my well-beloved son,
For your perfection can I pay the price?
Or would I have you play the coward's part,
With selfish, shriveled soul too small to dwell
Within so fair a frame? Is that my choice?
I sought the best! Shall I be satisfied with less?

Nay, I would have you honorable, my son—
Just, loyal, brave, and truthful, scorning fear
And lies and meanness—ready to defend
Your home, your mother, and your country's flag.
He's gone! Dear God! With bleeding heart I know
I still could not be satisfied with less!
—Sarah Benton Dunn, in New York Times.

WHO IS TO JUDGE?

D. H. Talmadge in Dumb Animals

A NUMBER of men drawn from widely-apart sections of the United State were gathered in the office of a country hotel in Oregon one stormy Sunday afternoon, and the talk was running along lines of food conservation, a "meatless Tuesday, wheatless Wednesday" announcement on the wall having served to introduce the subject.

There was no heat, no rancor, in the talk. Every man present was a patriot, ready and willing to do anything, to make any sacrifice, if the best interests of the nation might be served thereby. And so the conversation ran along, humorously for the most part, with anecdotes of "food-saving methods I have used" as its principal feature, until a man from Ohio, who had been half listening to the talk, half reading a newspaper, quite unexpectedly started something.

"I see it is proposed to kill the dogs," he observed quietly, his eyes upon the paper.

A tall man wearing a flannel shirt—a rough, hard-looking man, scowled alertly.

"What for?" he asked.

"Same old thing. The food they eat will be needed by more important factors in the war. A dog, the average dog at least, is a no-account thing anyway." Thus the man from Ohio.

He of the flannel shirt muttered something suspiciously like an oath, and his eyes shone with an aggressive light.

"There may be now and then a dog that would be better dead," he said. "The same thing's true of men. Listen, you gentlemen. If there's going to be much talk here about the dog-killing proposition I'll go out for a walk in the rain till you get through. Kill the dogs—humph!"

A man from Fort Worth winked covertly. He was a newspaper representative and he scented a story. Plainly the man of the flannel shirt had a reason. The reason might be interesting. Wherefore—

"You are in the dog business maybe?" he drawled.

"I am not. I'm in the ordinary everyday common justice business. I'm no dog crank. I want the dog to have a fair deal, that's all. I reckon the average dog will hold his own for services rendered with the average man. He's got his rights. Conserve his food if it is thought necessary, but kill him—why, it's diabolic to think of."

"Oh, I don't know," drawled the man from Fort Worth, provokingly.

"Well, I know. Listen, you gentlemen." The tall man loosened his shirt at the neck. "I live in Saskatchewan when I'm at home. Own four hundred acres, big barn, little house, two hundred head of stock, and one half-breed collie dog with fleas. I never cared much for dogs. This one followed me home from town one day about two years ago. I tried to drive him back, but he wouldn't drive. He knew my need of him, I reckon, better than I knew it myself. Once or twice I thought of killing him during the following year. He was a barker—musical as the devil, and he brought dirt and fleas into the house, and was altogether a nuisance. He wouldn't have been, of course, if he'd been properly appreciated and trained, but he was only a dog and had to do the best he could. I don't believe he'd have lasted long on the place if hadn't been for the baby. She was a year old, and from the first she loved that dog and the dog loved her. Seemed to understand each other. The youngster's sense of divine worth was keener than mine. Did it ever occur to you that so-called mature intelligence is somewhat of a joke? If it wasn't there wouldn't be so many folks down on dogs maybe. I got my jolt one morning last fall, and right away afterward I went to town and bought that dog the best collar I could find. I didn't call it a collar either—I called it a halo.

"I'll hurry over the story. It makes me sweat cold to think of it, and I know all right that one man's trouble stories are never interesting to other men. I'd gone to the barn to do the chores after building the kitchen fire. I heard a scream from the house. I hurried to the barn door just in time to see my wife run from the kitchen, her clothes blazing. The back end of the house was in flames.

"Yes, I reckon you've guessed it, gentlemen—my wife had poured coal oil on the fire to hurry the breakfast. She should have known better, but that's neither here nor there. I grabbed a horse blanket and threw it about her and rolled her on the ground, and then I thought of the baby and started for the house. And at that instant the wind sent a great cloud of smoke toward me and everything was bitter dark.

"It seemed hours before the light came to my eyes again, and during that time I knew the agony of despair. And then, when all hope had died within me, I heard a bark. It wasn't a wail or a howl, but a note of cheer. I sensed that quality in it. In a vague way it comforted me, for it spoke at least of companionship in my sudden misery. I struggled forward, trying to rub sight into my stinging eyes.

"The wind whirled again, and I could see the house. I noted in that first blurred glance that it was doomed, with everything in it. But the baby—God be praised!—wasn't in the house. The baby, gentlemen, was sitting on the ground at a safe distance from the fire, and there was laughter on the blessed, tear-stained little face, and there was laughter, or something like it, on the face of the dog that stood beside the child. I could read the story in the tooth-torn clothing. The dog had dragged the little one to safety.

"Later, when my wife had begun to recover from her burns, I learned that she had left the youngster on the floor in the front room while she went to the kitchen and she had chased the dog out of doors before she did so. But when she told the story her bandaged arms were around his shaggy neck and her tears were dropping on his head."

The man was silent for a moment, his eyes closed. No one spoke. The man from Ohio rolled up his newspaper and tossed it under the stove.

"Tell me, gentlemen"—the eyes of the man from Saskatchewan opened again—"who is to judge which dogs shall be killed. If anyone should wantonly kill my dog I'd call it murder. Who is to judge?"

No one replied. The man from Ohio stood up and walked to the window.

"It's raining harder than ever," he said noncommittally.

The Cultivator Patterns

8413—Ladies' Waist. Cut in sizes 36, 38, 40 42 and 44 inches bust measure. The fronts are gathered to the back, which extend over and gives the effect of a yoke.

8843—Stout Ladies' Waist. Cut in sizes 42, 44, 46, 48, 50 and 52 inches bust measure. The back extends over the shoulders and the fronts are gathered.

8818—Ladies' Dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. The waist is all in one at the front, and the U-shaped neck is finished with a roll collar.

8571—Girls' One Piece Dress. Cut in sizes 6, 8, 10, 12 and 14 years. The dress may be made with or without the belt, but if it is used it passes under the plaits.

8839—Girls' Dress. Cut in sizes 4, 6, 8, 10, 12 and 14 years. A tiny roll collar finishes the V-neck.

8568—Ladies' One Piece House Dress. Cut in sizes 36, 40 and 44 inches bust measure. The dress hangs straight from the shoulders, but a narrow belt gives it a more graceful appearance.

8432—Ladies' Yoke Skirt. Cut in sizes 24, 26, 28, 30 inches waist measure. The skirt has a hip yoke with a straight, one-piece lower section gathered to it.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

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Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

PATTERN DEPARTMENT

California Cultivator
Los Angeles

Food

TAPIOCA IN NEW DISHES

Those who gloried in the food adventures of "The Swiss Family Robinson" remember them as true conservationists. They used no wheat flour, ate the perishables, used local supplies, and laid by ample food reserves for lean seasons. The "Home Card" might well have hung from the window of their tree-house. The discovery of a "substitute" flour on this wheatless island was worth the excitement it created. You remember how they pounded the cassava root and produced a flour from which the mother made a sweet loaf.

Cassava flour is used today in tropical countries and has about the same food value as wheat flour. A familiar product from this same root is tapioca, high in food value, and useful because of its starch content in giving body to many dishes, some of them perhaps new to housekeepers. In the recipes given below use quick tapioca.

Duchess Soup

One-half onion, two tablespoons fat, two tablespoons tapioca, one quart milk, one egg or two egg yolks, three-fourths cup grated cheese, one teaspoon salt, paprika.

Cook the onion in the fat until tender but not brown. Remove the onion, add the flour, then the milk gradually, saving out one-fourth cup. Add the tapioca and seasonings and cook 15 minutes. Pour the soup over the egg, beaten with one-fourth cup of cold milk. Add the grated cheese and serve immediately.

Tapioca may be used for thickening soups, gravy and white sauce. Cook the white sauce in a double boiler allowing one tablespoon of tapioca to one cup of milk.

Tapioca Griddle Cakes

Two cups milk, two tablespoons tapioca, one egg, one-half teaspoon salt, three-fourths cup rice or corn flour, two level teaspoons baking powder.

Cook milk and tapioca in double boiler 15 minutes, add beaten yolk of egg and cook until mixture thickens like custard; cool and add beaten white and whip in well; add flour and baking powder. Bake on griddle and serve piping hot with butter and honey.

Minute Rabbit

One pint milk, three tablespoons tapioca, one cup cheese, one egg well beaten, one-half teaspoon mustard, one-half teaspoon salt, pepper or paprika to taste.

Scald the milk in a double boiler and when hot add the tapioca. Cook 15 minutes; then add the cheese cut into small pieces. Stir constantly till the cheese is melted, add the well-beaten egg mixed with a little cold milk, the mustard, salt and pepper. If desired, this may be turned into a baking dish and baked until brown.

Fruit Mold

Three level tablespoons tapioca, two tablespons sugar, one pint milk, one teaspoon vanilla, one-half pint cream.

Heat the milk in a double boiler, add the sugar, stir in the tapioca, and cook for 15 minutes. Pour into a bowl to cool; then fold in the whipped cream. Ornament with fresh berries, chill and serve.

RHUBARB COOKED TO CONSERVE SUGAR, FLAVOR AND HEALTH

By M. L. Berneike

Parboil the rhubarb as follows: Cut it into one-half to three-quarter inch lengths and cover it with two or more times its own bulk of cold water. Put it on the stove and let it come to boiling, which continue two or three minutes or until the rhubarb begins to pale but not fall to pieces. Drain off all the water, barely cover the balance with boiling water and continue boiling until thoroughly cooked. Add sugar to taste and remove immediately from the fire.

No more sugar is required than for good apples and the flavor is rich and delicious. More or less acid may be removed by varying the amount of parboiling water. Do not peel rhubarb. Its finest flavor lies in the exterior. If wanted for pies do not add water after removing the parboiling water but put the rhubarb directly into the pies.

The parboiling water is good to whiten the hands and soften the skin.

HOW TO KEEP FLOUR AND MEAL

Hot weather frequently produces spoilage in certain flours and meals if they are not properly cared for, especially those which contain a high percentage of fats, moisture or the outer coatings of the grain. To prevent such losses, particularly at this time when bread stuffs are so essential to the Allies and ourselves, the following instructions for the storing of these flours and meals are given:

Buy in small quantities.

See that flours and meals are in good condition when purchased.

Keep in cool, dry place.

Use tins or covered jars for containers, scalded and perfectly dried.

It is well to use two covered containers alternately, always putting fresh purchases in a clean container and never mixing the residue from the previous purchase with the fresh purchase.

ONLY BIRDS, BUT—

Written for California Cultivator
By Mrs. H. C. Wallace

Early this spring a pair of Bee-Martins or King Birds as some call them, took up their abode with us. Our place is new and the trees young, so when nesting time came the birds looked the place over. I saw the female carrying pieces of string for a day or so and then I discovered they had settled on a location. The trees simply wouldn't do as we have cats, so they had spied our wire calf muzzle or "weaner" hanging by the head strap on the end of a rafter of an open shed about six feet from the ground. In this they built a perfect nest. Now there are five spotted eggs and soon we will see those little downy heads above the edge of the nest. The male comes and sits on the wire above his mate and they hold their conversations while swinging in the breeze, the rest of his time is taken up trying to put fear in the cats and dog as well as myself.

Any one who loves nature and outdoor life would, on seeing this, realize the wisdom of these little birds and would protect them as I am doing and will the babies.

IN FLANDERS FIELDS

The writer of this, one of the most beautiful of the poems inspired by actual service on the battle front, is himself dead in Flanders fields. Many Cultivator readers will remember reading the verses in our issue of November 10, 1917. They have been widely coppied in papers the country over, originally appearing in Punch. The writer was Lieut. Col. John C. McCrea of the British forces serving in Flanders:

In Flanders Fields the poppies grow
Between the crosses, row on row,
That mark our place, while in the sky
The larks, still singing bravely, fly
Unheard amid the guns below.

We are the dead. Short days ago
We lived, felt dawn, saw sunset's glow,
Loved and were loved, and now we lie
In Flanders Fields.

Take up our quarrel with the foe;
To you, from failing hands, we throw
The torch, be yours to hold it high,
If ye break faith with us who die
We shall not sleep, though poppies blow
In Flanders Fields.

SOUTHERN PROSPERITY SONG

When we have spareribs,
For to chew,
We don't have spare ribs
Showing through. . .

DOING HER BEST

"No," remarked an indignant lady to an indignant cabman who had received his legal fare, "you cannot cheat me, my man. I haven't ridden in cabs for the last 25 years for nothing."

"Haven't you, mum?" replied the cabman, gathering up the reins. "Well, you've done your best!"

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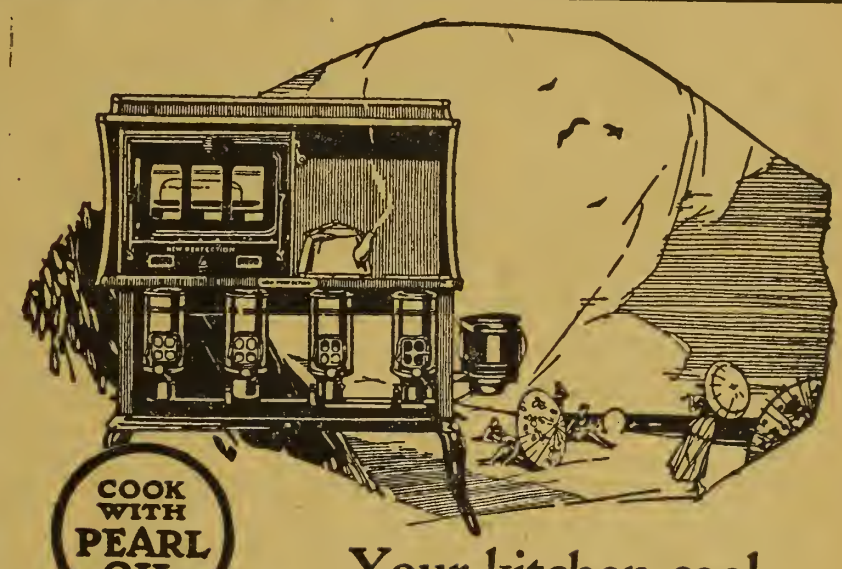

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In 1, 2, 3 and 4 burner sizes, with or without ovens or cabinets. Ask your dealer.

STANDARD OIL COMPANY
(California)

NEW PERFECTION OIL COOK STOVE

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Mill Creek at Forest Home

Along Roaring, Tumbling Mill Creek at Forest Home located 5200 feet up in the mountain depths of the San Bernardino range among lofty pines affords an ideal place for complete rest and recuperation.

Forest Home is not a full dress resort, but a delightful place for real folks who enjoy comfort, rest and a good time.

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For Information and Reservations Write Direct to

Forest Home Outing Co., Forest Home, Cal.

Los Angeles Market

Los Angeles, July 10, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.
California extra creamery 48

Dairy Exchange price past week on extras.

July	3	4	5	6	8	9
'18 ...	47	..	48	48	..	48

Rcts. wk. ending July 9, 232,350 lbs.

CHEESE

Brokers prices:
California fresh, lb. 25
Eastern Daisies 29
Domestic Swiss 40
Oregon triplets 27

EGGS

Exchange quotations. Prices to retailers 2 to 3 cents higher.
Fresh extra 46
Case Count 45
Pullets 43

Dairy Exchange prices past week on fresh extras.

July	3	4	5	6	8	9
'18 ...	45	..	45	45	..	46

Rcts. wk. ending July 9, 1100 cases.

POULTRY

We quote to producers.
Broilers .....23@30
Fryers 30
Hens, small, 19; heavy 25
Ducks, lb. 18-25
Roasters 30
Roosters, old 15
Turkeys .....25@35
Geese, young, lb. 22
Rabbits, live, 17@18; dr. 40

LIVESTOCK

We quote cwt. f. o. b. L. A.
Corrected Wednesday morning July 10, by the Cudahy Company.
Cattle—
Beef steers, av. 1000-1100 lbs—11.50@12.00
Heifers, good .....8.50@9.00
Cows, good .....8.00@8.50
Canners .....5.00@5.50
Hogs—
Av. 125 lbs. 15.50
Av. 150 lbs. 16.00
Av. 175-225 lbs. 16.50
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers .....11.00@11.50
Ewes .....10.50@11.50
Lambs .....14.50@15.00
Yearlings .....11.00@11.50

POTATOES

Wholesale selling prices:
Northern 1.80
Idaho Russets 1.80
New, lug .....65@70
Sweet, lb. 7

ONIONS

Wholesale selling price, cwt.:
Bermudas, cr. 1.15
Brown, cwt. 2.50
Crystal Wax, 50-lb cr. 1.50
Garlic 12
White, lug 1.00

VEGETABLES

Wholesale prices:
Artichokes, doz. .....60@85
Jerusalem. lb. 7½
Asparagus, lb. .....11@12
Beans—Wax, lb. .....5@6
Ky. Wonder .....7@7½
Limas, lb 14
Beets, sk. 1.50
Cabbage, lb., 1½; sk. 1.25
Carrots, doz. 30
Corn, sugar, lug. 1.00
Cucumbers, lug 1.00
Egg Plant, doz. 60
Horseradish, lb. 15
Lettuce, doz. 45
Leeks 35
Okra, lug 1.75
Mint, doz. 40
Onions, green, doz. .....25@30
Peas, Tel., lb. .....10@11
Peppers, Chili, lb., 14@15; Bell ....12@13
Parsnips, doz. 40
Parsley, doz. 20
Radish, doz. 30
Rhubarb, C. W. bx, 1.15; Strawberry.1.30
Squash — Summer, lug 1.00
Tomatoes, cr. 1.50
Turnips, doz. 50
Watercress, doz. .....35@40

FRUITS

Wholesale prices:
Apples, new, bx 3.00
Apricots, lug 1.75
Bananas, lb. .....7@7½
Cantaloupes — Ponies, cr. 2.75
Standards 3.25
Cherries, Black, lb. .....12@15
Currants, cr. 1.85
Figs, bx. 1.25
Gooseberries, lb. 12
Grape, Malagas, lb. .....12@13
Peaches, cr. 1.65
Plums, lug .....2.25@2.50
Strawberries, tray 1.10
Watermelons, lb. .....2¾@3

CITRUS

Lemons, packed, 7.25; loose 5.50
Juice 3.50
Oranges — Valencias 6.75
Grapefruit .....2.50@2.75

DRIED FRUITS

Date for making contracts on 1918 crop postponed again by government order to July 15.

BEANS

These are prices made by wholesaler to retailer.
Lady Washington 13.00
Limas 13.50
Pinks 8.00
Manchurian Reds 8.50
Baby Mex. 9.00
Garbanzos .....9.25@9.50
Small Whites 13.00
Blackeyes 8.50
Teparies .....8.50@9.50
Lentils 24.50
Mex. Red. 8.75

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....15@18
Amber extracted .....10@11
White comb, per case 7.00
Lt. amber comb, per case .....5.00@6.00
Beeswax .....36@40

HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A.
Tame Oat .....26.00@28.00
Volunteer Oat .....14.00@16.00
Wheat .....23.00@26.00
Barley .....23.00@26.00
Alfalfa .....19.00@22.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

Alfalfa hay $25.50 car lots f. o. b. L. A.; $23.00 f. o. b. common shipping points, taking $2.50 carload rate to destination.

GRAIN AND FEEDSTUFFS

Prices on Local Grain Exchange:

	Bid	Asked
No. 1 bright feed barley....	$2.60	$2.65
Milo maize, local		3.50
Oat middlings		36.00

San Francisco Markets

San Francisco, July 9, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:
Extras 48½
Prime firsts 47
Firsts 46½

Prices Extras past week and year ago

July	2	3	4	5	6	8
'18 ...	48½	48½	..	49	48½	48½
'17 ...	35½	36	..	36	36	..

Rcts. wk. ending July 8, 472,000 lbs.

CHEESE

Dairy Exchange quotations:
Cal. Flats ..., ...24½@25½
Cal. Y. Am. .....24½@25
Ore. Y. Am. 26
Jack Cheese, full cream .....22@23

EGGS

Dairy Exchange Quotations:
Extras 48
Firsts 41
Selected Pullets 46½

Prices Extra past wk. and yr. ago:

July	2	3	4	5	6	8
'18 ...	45½	46½	..	48	47½	48
'17 ...	32	32	..	33	33	..

Rcts. wk. ending July 8, 13,130 cases.

POULTRY

We quote to producers. lb.:
Per lb.: Large hens, 29@30; small do, 23@25; medium, 26@27; broilers and fryers, ¾ to 1½ lbs., 35@37; 1½ to 3 lbs., 34@35; young colored stock, over 3 lbs, 40; old roosters, 19@20; ducks, per lb., 22@28.
Squabs, doz. .....2.50@4.00
Belgian Hares, live, lb. .....15@18

LIVESTOCK

Prices gross weight:
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.
Steers, lb., 10@12; thin, 8@9; cows and heifers, 7@8¼; thin, 4@5½; calves, 7@10¼.
Sheep—Per lb. gross weight: Unshorn wethers, 11@11½; ewes, 9½@10; lambs, yearlings, 11½@12; milk, 14@14½; shorn sheep, 1¾@2.
Hogs—Hard grain-fed, weighing 100 to 140 lbs., 15½; 140 to 300 lbs., 16; 300 to 400 lbs., 15½.

POTATOES

Wholesale selling prices at wharf, cwt.:
River, new, cwt. .....1.75@2.00
Garnets 2.00
Sweets, lb. .....7@8

ONIONS

Wholesale selling price on wharf, cwt.:
Garlic, lb. .....3@4
New Red, sk. .....1.10@1.20
Clarksburg, sk. .....1.60@1.75

VEGETABLES

Wholesale selling price:
Artichokes, cr. .....2.50@4.00
Asparagus, lb. .....4@7
Beets, sk. .....75@1.00
Beans, String, lb., 5@8; Wax .....4@5
Limas, lb. .....5@7
Garden .....8@9
Beets, new, sk. .....1.50@1.65
Cauliflower, doz. .....40@60
Cabbage, lb. .....1½@1¾
Carrots, sk. .....90@1.00
Celery, cr. .....1.50@2.00
Corn, green, sk. .....2.50@3.00
Cucumbers, lug. 1.25
Egg Plant, lb. .....5@6
Lettuce, doz. .....15@20
Parsnips, sk. .....85@1.00
Okra, lb. .....15@17½
Onions, green, bx. .....65@75
Peas, lb. .....4@6
Peppers, Bell, lb., 2@5; Chili.....5@6
Rhubarb, bx. .....1.00@1.25
Squash, Summer, lug .....1.25@1.50
Italian, lug. .....50@1.00
Spinach, cr. .....50@75
Tomatoes, bx. .....75@1.25
Turnips, new, sk. .....65@75

FRESH FRUITS

Apples, White Astrachan, bx ...1.75@2.25
Red, bx. .....50@85
Apricots, cr. .....1.00@1.25
Bananas, lb. .....7@7½
Berries—Pr. ch.: Strawberries, ch. 7.00@8.00; blackberries, 7.00@10.00; loganberries, 5.50@7.00; raspberries, 8.00@10.00; gooseberries, lb., 6; English, 10@15.
Cantaloupes — Ponies .....2.75@3.50
Standard, 2.25@3.00; Flats ...1.00@1.25
Honey Dew .....2.50@3.00
Cherries—Drawer, 1.00@1.25; loose, lb., black, 9@11; Royal Anne, 14@16.
Currants, dr. .....60@75
Figs, bx.: Mission, double layer..75@1.25
Grapes, cr. .....1.50@2.25
Peaches, bx. .....1.00@1.75
Strawberry .....1.00@1.25
Pears, green sugar, cr. 75
Plums. bx. .....1.25@1.75
Santa Rosa .....2.50@2.75
Pineapples, doz. .....4.50@5.00
Watermelons, lb. .....2@2½

CITRUS

Lemons, bx., according to size, 8.00@9.00; lemonettes, 7.00@8.50; grapefruit, fy., 2.50@3.00; ch., 1.50@2.50. Oranges, bx.: Valencias, 5.00@6.00.

BEANS

Jobbers' prices, cwt., recleaned:
Limas .....11.90@12.00
Bayous .....8.00@8.25
Small Whites .....Nominal
Large Whites .....Nominal
Mexican Reds .....8.00@8.25
Blackeyes .....7.25@7.50
Pinks .....6.90@7.00
Red Kidney .....11.75@12.00
Cranberry .....Nominal
Teparies .....8.50@8.75

DRIED FRUITS

(See Los Angeles markets.)

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....15@18
Amber extracted .....12@14
White Comb, cs. 4.50
Light amber comb, cs. .....3.50@4.00
Beeswax .....36@40

HAY

Under date of July 6, Scott, Magner & Miller says:

Hay receipts in San Francisco past week, 1483 tons.

Arrivals continue much below normal for this time of the season and consequently the market is a trifle firmer. Reports from the interior intimate that while baling is still backward the next week will show much more activity in baling operations in many sections, and the next few weeks should show increased arrivals.

Farmers are still reluctant about selling their hay until they can secure presses and crews to bale and continue either to hold their crops at extremely high prices or refuse to place any valuation on their hay until baling operations commence.

Alfalfa remains very firm. Arrivals have been extremely light during the past week.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market — for prices to consumers charges of cartage, commission and handling must be added according to conditions:
Fancy Wheat Hay
(light 5 wire bale) .....26.00@27.00
No. 1 Wheat or Wheat and Oat Hay .....22.00@24.00
No. 2 Wheat or Wheat and Oat Hay .....19.00@21.00
Choice Tame Oat Hay .....24.00@26.00
Other Tame Oat Hay .....21.00@23.00
Wild Oat Hay .....17.00@20.00
Barley Hay .....18.00@21.00
Alfalfa, first cutting .....16.00@20.00
Alfalfa, second cutting .....22.00@24.00
Stock Hay .....15.00@17.00
No. 1 Barley Straw, bale.....50@80

GRAIN

Wheat—Government prices: Common white hard, base price, $3.50 per cental, or $2.10 per bushel of 60 pounds delivered in terminal warehouses in bulk; soft white, base prices, two cents per bushel less, or $2.08 per bushel; white club (including Sonora), $2.00 per bushel. If wheat, after cleaning, weighs 60 pounds or more to bushel, base price stands; if 58 to 60 pounds to bushel, three cents per bushel reduction; if 56 to 57 pounds six cents per bushel less; if less than 56 pounds, grain becomes sample grain and sells on its merits up to within one cent per bushel of 56-pound wheat. Additional charge made for sacks.

SEEDS

Prices in round lots, lb.:
Millet, recleaned .....5@5½
Alfalfa, lb. .....20@21
Flax .....7@7½
Hemp .....5@5½
Rape .....2½@3

Citrus Fruit Market

Los Angeles, July 10, 1918.

Market condition in oranges is generally satisfactory. The auction shows slight increase in prices over last week.

Lemons are firm, and big prices are being secured though not as high as a couple of weeks ago.

Shipments

Shipments of citrus fruits to date since November 1, 1917: SouthernCalifornia; oranges 11,775 cars, lemons 4149, total 15,924. To same date last season oranges 32,708, lemons 6227, total 38,935. Central California this season; oranges 2539, lemons 115, total 26,441. Last season to same date; oranges 4655, lemons 164, total 4819. Northern California; oranges 203, last year same date, 845.

AT THE AUCTIONS

July 3

St. Louis: 3 cars Val. 2 lem. Val. 4.70-6.15, lem. 4.20-7.25.

July 5

New York: 9 Val. 1 grapefruit, 1 lem. Val. 2.95-7.90, grapefruit, 3.25, halves, 1.70-2.80, lem. 7.30-8.15.

St. Louis: 2 Val., 2 lem. Val. 4.20-5.55, lem. 3.90-7.30, Sweets, 5.25.

Boston: 8 cars. Val. 2.80-7.30, grapefruit 3.15-4.50, Sweets 3.35-4.55.

Cleveland: 5 cars. Val. 3.65-6.95, lem. 5.15-8.40.

Cincinnati: 1 Val. 2 lem. Val. 3.20-6.20, lem. 5.15-7.85.

July 8

New York: 13 oranges, 5 lem. Val. 4.95-7.95, lem. 5.65-7.75, grapefruit halves, 1.70-3.95.

Boston: 10 cars. Val. 3.80-7.55, lem. 5.85-7.30.

St. Louis: 3 Val., 3 lem. Val. 4.05-5.90, lem. 3.45-6.05, lemonettes 2.10-2.30.

Cleveland: 5 cars. Val. 5.30-7.20, lem. 3.00-7.75.

July 9

New York: 8 oranges, 5 lem. Val. 4.50-7.90, lem. 4.60-6.90, grapefruit 4.55-4.80, grapefruit halves 2.55-2.70.

Philadelphia: 6 cars. Val. 5.25-7.25, lem. 3.45-6.55.

Boston: 4 Val., 2 lem. Val. 3.50-6.90, lem. 5.50-6.85.

MARKET NOTER

Los Angeles, July 9, 1918.

The Los Angeles branch of the bureau of markets of the United States department of agriculture gives the Cultivator the following notes on the week's markets:

Cantaloupes

The week witnessed the first arrivals of local Tip-Top cantaloupes in small lots which sold around $3.00 for standard crates. The supply of Arizona cantaloupes is practically cleaned up. Shipments from Imperial County are very light and of inferior quality. However, stock in fair condition is meeting a ready demand and moving at slightly higher prices than last week.

Potatoes

Receipts of home grown new potatoes continued quite heavy on the local market but a slightly stronger feeling is shown by the week's trade. White Rose stock in lug boxes jobbed at from 40 to 55 cents per box, with sack potatoes running from $1.40 to $1.50 per hundred. Practically all supplies of old potatoes are cleaned up. Carlot shippers have felt a more active demand from Eastern and Northwestern markets, and prices for carlots f. o. b. Southern California shipping points, when well graded, have advanced to $1.75, with a few sales of extra fancy stock at $1.85. Much ordinary stock poorly graded was sold around $1.65. With field digging lighter than was expected, it is believed the present movement of from 50 to 60 cars per day will exhaust the supplies of the present crop in the near future.

Cherries

The best large size Royal Anne cherries from Watsonville met with active demand, running from 15 to 20 cents per pound. Many lots of smaller or inferior quality showed a wide range from 8 to 15 cents and as the week closed with lighter receipts fancy stock brought corresponding higher prices, some sales being made as high as 25 cents per pound. A few ten pound flats of Oregon cherries sold on the market this week.

Onions

With the cleaning up of the Bermuda onion season in Coachella the supplies in the local market have been very light but entirely sufficient to meet the demand. During the week the first arrivals of Stockton Yellows appeared and jobbed at $1.90 to $2.10 per hundred pounds. This stock is of rather ordinary quality and condition and some arrivals badly heated. Local Silverskin white onions are being hauled in and meet with a fair demand around two cents per pound.

California and Virginia are the largest shipping states at this time.

Shipments of Georgia peaches average around 200 cars per day; during the past week 1649 cars were shipped. They ruled fairly steady in Northern markets at $2.00 to $2.50 per four basket carrier; $1.75 to $1.80 per six basket carrier last week; for the same week last year the price was $2.25 to $3.00; the year before, $1.50 to $2.25.

The volume of apple shipments is more than double that of the corresponding day last year.

The Los Angeles branch of the bureau of markets will begin daily issuance of a bulletin on grapes. The movement of Thompson Seedless has started.

The New Mexico state agent estimates the crop of cantaloupes at 90 per cent of normal and the stand at 95. The first car will roll by July 25. The outlook is for a total production of 110 per cent of last year's output and an average yield of 500 crates per acre is expected.

Watermelons

The first car of Ariconas was shipped this year on June 12, as compared with June 14 and 15 in 1917 and 1916 respectively. As reported by the field agent, 40 cars had been shipped up to July 5. The average price to growers for this season to date has been $35; last year $22.

Arizona Potatoes

Shipments will be finished the second week in July and will not reach the original estimates of 60 cars, according to reports from the field agent. Shipments in 1916 and 1917, respectively, were 37 and 87 cars. Fifty cars are now expected. Prices to growers have been 1½ cents to 1¾ cents.

A better yield of Colorado cantaloupes is in prospect than last year and carlots from this district are expected to roll by August 28. Four hundred and fifty cars are looked for from this district.

Forty or fifty cars of Iceberg lettuce for July shipment are expected from the Seattle district this year, against 15 cars last year.

Southern California

The supply of good quality cantaloupes from most districts in the Imperial Valley is about exhausted. Labor has been scarce and expensive. Increased freight rates will probably result in a lighter acreage next year.

Movement of the potatoes in the Fullerton district of Orange County is practically finished and San Fernando Valley is now at the height of its season. The yield is given as 50 per cent of normal. The price to growers is $1.40 per hundred.

The condition of Central California tomatoes is estimated at 82. In the Sacramento district the acreage did not reach expectations and the stand and growth is very irregular in many fields. In parts of Santa Clara County soil moisture has been deficient; wells have been lower than ever before, and irrigation water has not been available for all fields. In the Mountain View district fields are looking well, and a reporter controlling 800 acres is expecting 15 tons per acre, against 12 tons last year.

A special reporter estimates the condition of the Turlock crop of cantaloupes at 65 per cent of a year ago. The season has been very different from last year, but both seasons have had unfavorable conditions to contend with. In view of the increased acreage in parts of the San Joaquin Valley a fairly heavy output is still in prospect.

PARTIAL LIST CALIFORNIA FRUIT AND VEGETABLE SHIPMENTS

From post card reports to the Los Angeles branch of the bureau of markets, United States department of agriculture, report is made of the following shipment of cars of products from California for the week ending July 8: Apples, 5; apricots, 59; beets, 1; blackberries, 2; cabbage, 6; cantaloupes, 3; carrots, 5; cherries, 19; dried apples, 1; dried apricots, 1; dried beans, 6; dried peaches, 1; dried pears, 1; dried potatoes, 4; grapes, 7; lettuce, 5; logan berries, 15; mixed fruit, 45; mixed vegetables, 19; mixed fruit and vegetables, 12; onions,. 105; peaches, 15; pears, 6; peas, 1; plums, 393; potatoes, 491; raisins, 15; tomatoes, 6; watermelons, 8; Arizona: cantaloupes, 224; watermelon, 5.

WHAT TO DO IF BITTEN BY A RATTLESNAKE

Since the rattlesnake is more or less common in many parts of the United States every one should know how to deal with snake bites.

The following treatment has been outlined by one of the best reptile authorities in this country:

First, shut off the flow of blood towards the body to prevent the venom attaining access to the general system. Second, enlarge the puncture with a sharp knife and endeavor to drain away the surrounding poisoned blood. Incisions slightly deeper than those made by the fangs should be made directly across the primary wound and about an inch in length. The flow of blood should be hastened by the suction of the mouth. Third, wash out the wound thoroughly with a strong solution of permanganate of potash.

While these precautions are being taken send for a good doctor. After the wound has been thoroughly washed and bled, the ligature should be loosened slowly and bleeding from the wound again stimulated as the blood is allowed to circulate in the wounded part.

Whiskey may be given in frequent small doses to stimulate the heart and combat the paralyzing action of the venom. In large doses it benumbs, reducing the system to a condition most susceptible to the action of the poison, In a great many deaths from rattlesnake bites, so called, the symptoms of alcoholic poisoning have been more pronounced than those of snake bite.

"This important fact should be understood that an arm or leg bitten by a poisonous snake is very susceptible to common blood poisoning, owing to the deadening effect which the venom produces upon the organisms in the blood that combat germ life." —Alfred Westfall, Colorado Agricultural College.

NEW BUILDING READY FOR STATE FAIR

Work on the new $300,000 Horticultural and Agricultural Pavilion at the state fair grounds at Sacramento is being rushed so that the structure may be ready for occupancy for the 1918 fair which will open on August 31. One of the cattle barns is being moved on to the newly acquired five acre tract at the south end of the grounds. The horse show tent will also be moved to this location. Altogether there is to be a far better arrangement and grouping of exhibits this year. The machinery hall is being put into shape for the vocational department, which will have an extensive exhibit.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Stock in Pasture

What rights has an owner of pastured stock when the agreement was that the stock be brought home on call and there have been three demands for the return of the stock. Four months have elapsed since the third demand, and the stock is not yet home?—Subscriber, Owensmouth.

Depending upon the proof of the contract, the owner could doubtless hold the pasture keeper for the loss which the owner has suffered by not having the stock brought home within a reasonable time after the first call.

Settling Estate

If a widower having several children, some in this country and some in foreign lands, makes a will leaving his property to two of his children in this country and does not mention any of the others, is it necessary to secure releases from those not mentioned, provided they make no formal protest to the probate of the will, as it reads?—Subscriber.

The will, if properly executed, is entirely valid as far as it goes and would not be subject to contest merely upon the grounds stated. The trouble is that it does not go far enough to provide for a proper decree of distribution and that is where the objection upon the part of those children not mentioned would come in. Under the statute, by failure to provide for or mention the children, the children not mentioned claim their share under the law just as though there had been no will at all in so far as they are concerned. It would, therefore, be absolutely necessary either to procure such releases, or have their share set aside to them.

Hours of Labor

What are the laws relative to hours of labor for children and women on farms? How long is the day and how much overtime is allowed?

The act regulating the hours of labor of women contains a proviso excluding from the operation of the act the harvesting, curing, canning, or drying of any variety of perishable fruit, fish or vegetable. The act provides that in no manufacturing, mercantile, mechanical establishment, laundry, restaurant, telephone, telegraph, or transportation company shall women work more than eight hours per day, or for 48 hours per week. Nothing is said, other than the above exclusion from the operation of the act, as to farm work. Under the act providing for an industrial welfare commission, the commission, after a hearing of the conditions prevailing in any industry, are authorized to fix the minimum wage to be paid to women and children in such industry and also to fix the maximum hours of labor, which shall not be more than hours above stated. Minors 16 years of age or over are permitted to work at any agricultural, horticultural, viticultural, or domestic labor during school vacations and after school hours. It would thus be necessary for you to write Industrial Welfare Commission, Sacramento, in order to procure a definite answer to your question, if they have determined the matter.

Production and self-denial are the guns that will beat the Huns.

SWAP YOUR TIRES?

Do you know that your right rear tire wears faster than the other three? Well, it does. Have you ever stopped to think of the reason for it? The answer is furnished here by the B. F. Goodrich Rubber Company, together with some timely advice on interchanging tires to realize maximum wear from your entire set.

Since your power and traction come from the rear wheels your rear tires get the hardest wear. You drive on the right side of the road and roads are crowded—your car, nearly always, is slightly tilted—more weight being on that side, therefore your right rear tire takes hold first and bears more traction than the left rear.

When in motion the left rear tire rolls along comfortably on the smooth middle portion of the road, while the right rear gets the rough going on the off-side—the sharp edges of the asphalt, the rocks and ruts and is more likely to encounter objects thrown on the side of the road. Then again the rear tire bears the brunt of the stopping, sometimes sliding—a majority of the wear falling on the right rear.

The tire receiving the next hardest usage is the left rear, then the right front and last the left front. So when your right rear begins to show signs of wear, and you wish to spare it, put it on the left front wheel. And likewise change your left rear to the right front.

WEATHER CONDITIONS

San Francisco, Cal., July 6, 1918.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	.00	.00	.03	58	48
Red Bluff	.00	.00	.00	104	64
Sacramento	.00	.00	.00	96	56
San Francisco	.00	.00	.00	66	50
San Jose	.00	.00	.00	82	46
Fresno	.00	.00	.00	104	66
San Luis Obispo	.00	.00	.01	80	56
Los Angeles	.08	.08	.00	84	60
San Diego	.00	.00	.00	72	62

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to Name .....

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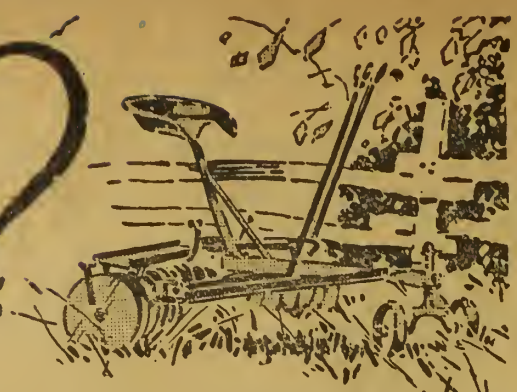

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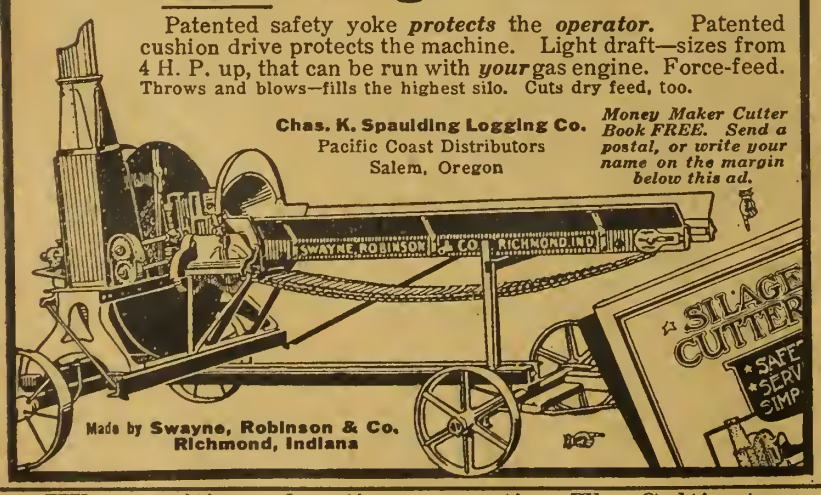

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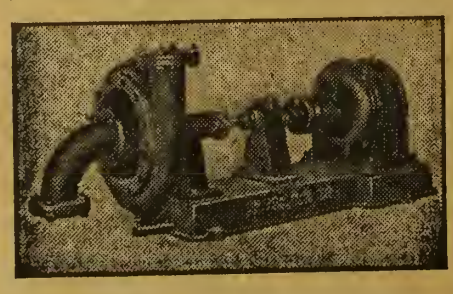

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Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — July 20, 1918 — No. 3

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Established 1877 Forty-first Year

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Saturday, July 20, 1918

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THIS WEEK'S COVER

The Sacramento Valley was at one time the greatest grain field in the world. Some grain ranches were so large that it required days to drive about them. Conditions are changed, and the great tracts are divided up into parcels, and fruit and other products planted. This has meant a material increase of food products and a material loss of the picturesque. Then came rice, and today we are producing $10,000,000 worth.

LAND SETTLEMENT

Now comes the state of Washington with the organization of a state land settlement association, with many references to the "up-to-date system of land settlement adopted by California" and an appeal for its installation in that state. Dr. Elwood Mead, head of the land settlement commission in this state, recently made address before conference of representative Washington people, and it was resolved "that, next to winning the war, the adoption of a sound land settlement policy is the foremost economic problem before the American people."

USE OUR ROADS

Freight rates have now been advanced 25 per cent; passenger fares are now made under the new schedule of three cents per mile; the transportation service is needed to a greater extent than ever in meeting war demands. The people are aiding by growing at home as much food as possible. The automobile and the truck are uniting in saving transportation service, and it all goes to prove that patriotic service has been rendered by our good roads boosters who have been laboring for nearly a score of years for better roadways. There are all too few of these improved roadways for best of service, but they are increasing and capacity to use them is also increasing. Presumably the truck and the auto will be called upon to bear their proportion of war costs, and the new war revenue bill will probably "touch" both these useful vehicles. But they will be found ready to do their share.

COOPERATE

The "open day" for selling dried fruit has arrived, and still there is little activity. Growers are hoping that the next few days will see material improvement. Meantime it is in order to call attention to the need for more general cooperative effort as to next year's crop. The cooperators have certainly an advantage in crop disposal, and this is a good time to remind independents of their duty to themselves and to their industry.

Food Administrator Merritt has been quoted as saying:

"There is no reason, at the present time, why the packer should not contract for the crop. The government needs a large pack of canned fruit and vegetables, and any attempt to create uneasiness in the mind of the producer, or any attempt to limit the pack in quantity and quality, is contrary to public interest. It is the view of the food administration that the packing industry should take immediate steps to clear up this situation."

RETURN POSTAGE

Practically every issue of the Cultivator contains some item of interest to readers of the Cultivator, regarding which they wish further information. Quite often they wish to know the name and address of the writer of a certain article. One such item recently appeared which brought to this office many letters of inquiry as to writer's address — a matter of interest to the inquirer only—this almost invariably without return postage. These inquiries have all been answered, sometimes at a cost of 30 to 40 cents per day for postage — a matter too small to refer to but amounting to a considerable sum in a year. When the inquirers write to this contributor for specific information we trust the return postage will be enclosed.

Where one is writing to an advertiser regarding his own business there is no call for return postage, but where the reply is merely an expression of good will the enclosure of postage is only what is due the one of whom the favor is asked.

SAVE GAS

Without question the federal government will be compelled to take a stronger hand in the matter of saving fuel. The fuel administration has announced that the ever increasing demand for gasoline to supply airplanes, motor transports and other overseas uses, in addition to abnormal demands at home, is making severe inroads on the supply. "The abnormal waste which characterizes the use of gasoline in motor propelled vehicles, however, must be brought to an immediate halt. Legitimate use of gasoline for internal combustion engine fuel does not mean that gasoline may be handled wastefully. The present method of distribution of gasoline is extremely wasteful, the product being handled carelessly and without the slightest regard for conservation in thousands of garages and supply stations throughout the country. The fuel administration is urging everyone concerned in the production, distribution and consumption of gasoline to eliminate every possible point of waste. Unless this is done, the present supply may in a short time become an actual shortage. If this condition develops the fuel administration will not hesitate to make effective enforced conservation methods, which, however, up to the present have not been necessary."

KEEPING FIT

The commission on training camp activities will soon issue a book, "Keeping Our Fighters Fit—for War and After." In the prefatory note President Wilson says:

"I do not believe it is an exaggeration to say that no army, ever before assembled in history, has had more conscientious and painstaking thought given to the protection and stimulation of its mental, moral and physical manhood. Every endeavor has been made to surround the men, both here and abroad, with the kind of environment which a democracy owes to those who fight in its behalf. In this work the commissions on training camp activities have represented the government and the government's solicitude that the moral and spiritual resources of the nation should be mobilized behind the troops. The country is to be congratulated upon the fine spirit with which organizations and groups, some of them of national standing, have harnessed themselves together under the leadership of the government's agency in a common ministry to the men of the army and navy."

This war has developed more than any other the fact that there is great military value in a clean, wholesome fighting force with wholesome surroundings.

WHEAT PRICES

The Cereal Division of the Food Administration, formerly the U. S. Grain Corporation, has announced:

No. 1 wheat of the Northern spring, hard winter, red winter, Durum, and red white grades will be sold in the various markets at the following basic prices:

New York, $2.39½; Philadelphia, $2.39; Baltimore and Newport News, $2.38¾; Duluth, $2.22½; Minneapolis, $2.21½; Chicago, $2.26; St. Louis, $2.24; Kansas City and Omaha, $2.18; New Orleans and Galveston, $2.28; Tacoma, Seattle, Portland, Oregon, Astoria, San Francisco, and Los Angeles, $2.20.

The price basis for No. 2 wheat will be three cents below No. 1, and for No. 3, four cents below No. 2. Grades below No. 3 will be dealt in on sample.

Special classes of wheat will be sold on the following schedule: Dark hard winter, two cents above hard winter; dark Northern spring, two cents above Northern spring; amber Durum, two cents above Durum; yellow hard winter, two cents under hard winter; red spring, five cents under Northern spring; red Walla, seven cents under red winter; red Durum, seven cents under Durum; soft white, two cents under hard white; white club, four cents under hard white.

This Week's War Notes

It is reported that typhus is existent in some sections of Germany.

The North Sea has been mined so completely that submarine activity is greatly curtailed.

Dispatches from Athens refer to insurrection in Turkish forces and killing of German officers.

An American submarine in action with U-boat sunk the enemy and its crew excepting two captured.

Allied troops, including Americans, now occupy positions in extreme Northern Siberia, in fact, within the Arctic circle.

Quentin Roosevelt, youngest son of ex-President Roosevelt, was shot down last Sunday. He was a lieutenant in the American aviation service. His machine fell in flames behind German lines near Chateau Thierry.

President Wilson has written a letter to the chairman of senate foreign relations, urging appointment of commission to investigate conditions in Russia. Daniel Willard will be appointed by the president if commission is selected.

The victory of the Italians and Allies in Northern Italy appears to have been more complete than first reported. The Italian troops are now resting and repairing lines. The observation of July 14th in commemoration of the fall of the Bastille was general in all parts of the United States.

Amsterdam reports that Vienna's daily food ration has been cut to eight ounces, three ounces of which may be bread or flour substiutes, one ounce wheat, two and a half ounces potatoes, balance of fat, jam and war coffee. Flour is $4.50 to $5.00 per pound; beef, $5.70 to $7.00; horse flesh, $3.55.

The Albanian advance is being held and it is considered a great advantage has been secured by the Allied forces. Owing to there being no roads, the advance is extremely slow. Connection has been made with the forces from Saloniki, and the Allied line now extends from the Adriatic to the Aegean. The most important town captured during the week was Berat with immense quantities of war material and many prisoners.

The Russian situation is improving slightly. The Allies have agreed to advance a billion dollars for restoration, and it is known that with a leader vast numbers of Russians will aid the Allies in repelling the Germans. Lenine's control has been entirely broken, and a complete defeat has been administered to the Bolshekivi in the Ural Mountains. Practically all of Western Siberia is now in control of the Czecho-Slovaks.

"The Yanks are coming" has thrown a fit into the ranks of the Teutonic shock absorbers. Early Monday morning after 33 days of preparation for a final Teutonic drive 420,000 shock troops made a drive on a ten mile front occupied almost entirely by American troops. Other attacks extended the battle line over 65 miles with over 800,000 in the attacking force. The first plunge resulted in indenting the American line to a depth of over two miles. The Yankees soon recovered and with characteristic yell made counter charge. At the same moment American troops on one flank near Chateau Thierry and on the other near Rheims endangered the entire German advance. The retreat was even swifter than the advance. Wednesday morning reports indicate complete American victory.

Is the Auto Necessary to Largest Production?

By California Contributors

LIFE is "one blamed thing after another" in the eyes of most of us these days of the war. Our daily life seems a succession of stumbling, or climbing, as the case may be, over one obstacle after another. We are all, however, travelling in one general direction, toward the right finish of the war—and the swifter the better. Crisis after crisis arises which calls for swift decision, each decision demanding on the part of those whose duty it is to make it an understanding of all the facts bearing upon the subject. This means almost superhuman intelligence; that we don't pretend to have; but we have the next best thing, collective intelligence, which we are ready to place at the disposal of those who are directing in Washington the present policies of our nation.

The essential thing now is to speed up all activities necessary to carrying on the war and to eliminate all that aren't. We must produce more food, with less power and get it to where it is needed as swiftly as possible—which brings us to the immediate question in hand:

The authorities at Washington are confronted by the necessity of greatly reducing the output of automobiles. Steel, rubber, everything entering into their construction is demanded overseas. Ships to move these supplies, especially rubber from South American ports, are needed to carry troops. The easy solution is "Americans should willingly give up their pleasure cars to aid the war," and, truly, Americans would. But are the cars all pleasure cars? Plainly not. For gradually the automobile has entered into life's necessities until any sudden change would mean loss of efficiency and loss even in food production. The powers that be at Washington want the facts. Will Cultivator readers aid in securing these facts?

The Cultivator is in a position to forward these facts to those who want them and where they will be used in making wise decisions. Will every auto owner who reads this act quickly. Answer these questions or such as may be answered or give any facts which will show the real usefulness of the auto in farm operations. Here are the questions:

Mileage per year?

Mileage percentage for pleasure alone?

Mileage percentage, business and pleasure combined?

Mileage percentage solely for business?

If necessary to discontinue use of auto entirely would purchase of vehicles or horses be necessary?

If horses are purchased, how much feed consumption?

Do you own a truck which will answer for business purposes?

Do you use trailer?

Consumption of gasoline per year?

Consumption of oil per year?

Distance from shipping center?

If use of auto prohibited can additional horses be purchased? Would it necessitate employing more labor?

And lastly, if necessary to restrict use of auto, to what extent could this be and not interfere with farm efficiency?

Above all, bear in mind: "What are the needs of our government? How may the war be quickest ended?"

If you cannot answer correctly all of the questions, give us all the information you can and fire it back quick.

Facts Already Gathered

As soon as this question was presented to the Cultivator a series of questions was sent, mostly to farm advisers, horticultural commissioners, and others in touch with farm operations. Answers to these are already coming. Here are a few of them:

G. W. Harney, Horticultural Commissioner, Yuba County

A careful enumeration will show that there are not over ten automobiles in Yuba and Sutter Counties that are used exclusively for pleasure purposes. On every farm there is a low priced machine as Ford, Dodge, Buick, etc. used for business purposes and to take the farm people and families to town and back. W. A. Beard, a prominent rancher in District No. 10 north of Marysville uses his Ford to carry cans of cream to market; John Morrison, rancher near Ostrom south of Marysville uses his Buick to carry supplies and tools to his ranch. Hundreds of other farmers use their machines for the same purposes.

Government agents have taken away from these counties all of the best horses and mules. It would be impossible to go back to the use of horse drawn vehicles. Tractors and trucks have replaced horses on the farms. A horse drawn vehicle is a rare sight on the highway or in the towns on market day. Sales and stocks of buggies have fallen to nil. Harness stores have gone into auto repairing work.

We have had active campaigns to bring idle lands in remote districts into cultivation of cereals and growing of live stock. Thousands of such acres have been brought in solely by the use of automobiles, trucks and tractors. To shut off or hamper in any way the supply of automobiles, low priced machines, or trucks will practically stop the production of food in Northern California.

If we could get more automobiles and better roads our production of food such as rice, wheat, oats, prunes, raisins, figs, olives and so on could be greatly increased in a very short time. We are producing enormous quantities of rice and beans. I ask you where would that industry land if we are deprived of the use of automobiles. Nothing should be done to discourage the growers who are engaged in the production of staple foods.

D. D. Sharp, Horticultural Commissioner, Riverside, County

You ask in your letter to name some farmers who are making use of their automobiles for transportation purposes to and from market, etc. If you still think you need this list of names I will attempt to secure it for you, but as it would be necessary for me to get the names of practically every farmer in Riverside County who owns an automobile, you will readily see that I should need a little time to get the names of several hundred automobile owners who use their machines as an absolute necessity in their farm work. I would not however, more than start to name them.

This statement might be doubted by a person who is not familiar with our conditions and the absolute necessity of the automobile in furthering farm work, but you know, as everyone else who is in close touch with our farm problems knows, that this is an actual fact. Any person who through lack of information regarding the usefulness of the automobile seeks to curtail its use or make its use more burdensome to the farmer than it is at present, might just as well curtail the use of horses or tractors and regulate the farmer back to the primitive ages and force the use of oxen in his farm work.

I fail to see that our farmers have very much time for joy-riding or other trips, they are too short-handed and too busy trying to raise the crops to help win the war as is asked by the federal government, and if they did manage to get an idle hour or two in which to take a rest and load their wives and families into the machine with them to get a little airing and change from the burdens of farm life, God knows it is their just due, and who would deny them this?

Snowcrest Creamery, Beckwith

R. C. Mercer, Pete Scalari, L. Guidici, L. D. Madelena, C. Pasquetti, Jack Folki, Joe Biaggi, Guido Ramelli, Frank Bolson, B. F. Roberti and Albert Ede use their cars for hauling cream and looking after other farm interests.

O. E. Bremmer, Horticultural Commissioner, Santa Rosa

It is a very common practice in this county of the small farmers, particularly the poultrymen, to use their automobiles in delivering their products to the railway station. Some of them employ two-wheel trailers which will ordinarily carry about 1000 pounds.

It would be impossible for me to say off-hand how many of these are used, but it certainly would reach over 100. It would be pretty safe to say that 90 per cent of the farmers of this county use their machines directly in hauling farm products to market or in looking after the interest of their farms.

E. O. Essig, County Agent, Ventura County

It would be rather difficult for me to give you exact names of people using their pleasure cars for farm business, especially with regard to the exact business which the car may be put to. I know that practically all of our farmers use their pleasure cars to bring home all the supplies which the family consumes, as well as carrying to market such small things as may be used in the exchange, such as dairy products, eggs, etc. In other words, the pleasure car in our farming communities is used for everything except heavy hauling which is ordinarily done by trucks or wagons.

E. S. Langford, Horticultural Inspector, Los Angeles County

Many of the citrus growers owing to cost of feed have disposed of their teams and are now hiring that work done by regular teamsters, consequently they need their cars for hauling their supplies, particularly groceries, as the grocers in Covina have discontinued delivery into the country. Also several of the growers now have trailers so that they can haul small loads (orange boxes, etc., in case of emergency). With few exceptions I would say that the automobile to the citrus grower is an absolute necessity, not a luxury.

Herman I. Graser, County Agent, Nevada County

The following farmers of this county, besides many others, own so-called pleasure cars and use them continually in their business of farming as follows:

Ed Piper, Rough and Ready, (Studebaker) regular cream delivery.

J. S. Corey, Grass Valley, (Chevrolet) hauling sacked feed and supplies.

M. B. Church, Rough and Ready, (Reo) hauling supplies to various ranches and to sheep camps. Children use car to drive 15 miles to high school.

Louis Johnson, Smartsville, R. F. D. (Ford) butter deliveries several times a week, children use car to drive nine miles to high school.

H. A. Miser, French Corral, (Ford) hauls supplies to ranch 15 miles regularly.

John Weyel, Rough and Ready, (Maxwell) peddles berry and fruit products from his ranch.

W. J. Sanford, Wolf, hauls supplies to ranch 20 miles from town.

Geo. Bennets, Rough and Ready, (Ford) hauls supplies and fruit.

W. G. Robson, Smartsville, R. F. D. (Cadillac) hauls supplies, cream, etc.

F. C. Longe, Nevada City, (Dodge) delivers $10,000 pack from home cannery.

Tom Casey, Rough and Ready, (Dodge) hauls supplies, feed, cream, etc.

A. L. Wisker, Grass Valley, (Ford) hauls supplies, repairs and makes many business trips in connection with various state committees, etc.

C. P. McAlmund, Peardale, (Chevrolet) has no horses, dependent upon car for supplies, repairs, etc.

L. Emrich, Grass Valley, R. F. D. (Dodge) hauls feed and supplies.

Phil Gordon, Rough and Ready, (Ford) delivers fruit, hogs, sheep, etc.

Under our conditions any farmer who tries to get along without a car of some sort is very foolish, from the fact that all our ranches are far from town and there is not a farmer in the county who is not dependent, more or less, on his car for supplies, repairs, and the marketing of products such as eggs, butter, fruit, berries, etc.

Eugene S. Kellog, Horticultural Commissioner, Santa Barbara County

I talked this over with some of the farmers yesterday and I find that it is a concensus of opinion that they could not run their farms without a machine. I found one man hauling fruit from his orchard with a Ford. This was at the C. Lillingston place in Carpenteria. Another farmer said he has run his Reo over 5000 miles and he and his wife had never had one pleasure trip in it. This was L. B. Cadwell of Carpenteria. I rode in town with Arthur Baulin the other day and he was hauling his melons to town in his Cadillac. He has hauled the mail for I think three years. He used to make several trips a day and has to haul about eight miles, so he saved much time. J. G. Williams of Goleta uses his car hauling fruit and produce and could not get from one ranch to another to do his business without a machine. Tom Emmons of Goleta hauls vegetables and fruit to town nearly every day in his Stude-

Continued on Page 71

Agricultural News Notes of the Pacific Coast

Northern California

Humboldt County fair will be held at Ferndale, August 19-24.

American River prune orchards report heavy crop.

Colusa is marketing three and a half pound onions.

State Forester Homans suggests "fireless day" be observed by all campers in the mountains.

Yolo County apricots which were shipped East as fresh fruit have made remarkably fine returns.

Yolo County has 9000 acres of almonds, the largest acreage of any county in the state.

Yolo County is developing a great industry in the raising of carrot seed.

The Sonoma Valley Apple Growers' Union expects to market this year 30,000 boxes.

Rice growers are asking for a guaranteed price of $4.50 per cwt. for paddy rice.

A serious infection of foul brood is reported from the apiaries of Glenn County.

Hop growers of the Sacramento Valley are getting together to mature plans for the protection of their industry.

The Graton district of Sonoma County reports fine cherry and berry crops and early apples 90 per cent of normal.

State horticultural commission has ruled that salt grass may be shipped to the state from Utah providing certain regulations are adhered to.

Placer County supervisors have extended the $4.00 bounty on coyote scalps till the middle of October. This action was taken on the request of sheep and goat raisers.

Central Creamery at Ferndale, Humboldt County, is now manufacturing milk sugar. One hundred pounds of whey produces three and one-half or four pounds of milk sugar.

The Northern California Milk Producers' Association has taken over management of the Orland creamery and will make it the central churning station for the valley north of Williams.

Superintendent Harry Smith of the state insectary announces the introduction of a beetle from France and Switzerland which will check the gypsy moth which has been such a pest in the New England states.

Farm Adviser Christiansen of Humboldt County has announced that a federal engineer has been secured to make survey of Eel River to determine some practical method of controling the currents that yearly destroy many acres of farm lands along its banks.

An association of farmers from Butte, Glenn, and Colusa Counties have arranged to bring in 5000 Mexicans to help in the harvest in the rice, bean, and beet fields, after which the laborers will be sent to Imperial for the cotton harvest, then on to Arizona and back to Mexico.

Some damage is reported to the orange crop in the Sacramento Valley from excessive heat causing an unusually heavy drop. Horticultural Commissioner Mills of Butte County estimates the orange crop of the Oroville district at not more than 50 per cent of normal.

Central California

Work has begun on the new cotton gin at Bakersfield.

The cannery at Visalia is running on apricots.

Prof. H. J. Quayle has been conducting a school of fumigation at Lindsay.

The cannery at Exeter opened on apricots June 22.

Stanislaus County board of trade has been of material aid to farmers in securing farm helpers.

The packing house of the California Peach Growers' Association at Modesto is to be completed by August 1.

Tulare County reports the outlook for the coming orange crop as approximately 75 per cent of normal.

Minimum wage for male cannery employes has been fixed at 35 cents per hour for a ten hour day, and 42 cents for overtime and holidays.

Field Agent Kaufmann of the United States bureau of markets finds the bean acreage of San Joaquin Valley about the same as last year.

Sugar factory at Corcoran will open within a few days. It is estimated that the factory will have 70,000 tons of beets to crush.

Madera County has a new farm adviser to take the place made vacant by resignation of Adviser Birch. The new adviser is Edward Smyth.

The first delivery of fruit to the packing house of the Madera Fruit Growers' Association was made the last of June.

Growers have ruled that they should receive for the coming year's dried peaches 11 cents; price to jobbers f. o. b. Fresno 12.8 cents.

Cool nights have delayed Tulare County's cantaloupe crop. It is estimated the county will produce $3,500,000 worth.

The past year has brougbt the highest prices for oranges which have obtained since the inception of the industry in California.

The county farm bureau of Tulare County is appealing to the state university for a citrus expert who will give reason and prescribe remedy for the serious June drop of oranges.

W. B. Nichols of Dinuba has been named assistant manager of the dried fruit section of the federal food administration. He will leave for Washington soon.

Farm centers of Santa Cruz County are discussing advantages of pooling wool for direct sale to the government and pooling orders for bean and potato sacks.

Kern County is marketing its White Rose potatoes. Most of them are going to Kansas and Texas. Growers are getting $1.60 per sack f. o. b. Bakersfield.

The Stanislaus County board of supervisors has enacted an ordinance prohibiting smoking in fields, barns, warehouses or other places where inflammable crops are growing or stored. The smoker is subject to a $500 fine and six months.

The state council of defense has appointed a commissioner to direct the saving of grain and rice straw for cattle feed. W. D. Egilbert, former commissioner general of the Panama Pacific, has been selected for this work.

Southern California

Southern California has 64,000 acres in walnuts.

Elsinore's new cannery is now operating on apricots.

Anaheim has organized a farm bureau center.

San Fernando Valley reports plenty of help available for cannery work.

Pale Verde Valley has 17,000 acres planted to cotton.

Orange County's apricot crop is turning out about 40 per cent of normal.

Orange County canneries are paying 30 cents per hundred pounds for pitting apricots.

Orange County expects to harvest 750 sacks of beans this year. Limas and blackeyes are away in the lead.

The Narod district expects a big walnut crop and reports trees practically free of blight and aphis.

Orange County citrus growers expect to receive $8,000,000 for their 1918 crop.

Tomato growers are urged to spray with Bordeaux mixture as a repellent of the flea beetle.

Riverside County dairymen are working out a plan to secure cheaper distribution of milk thereby lowering price to consumer.

Imperial will begin cotton picking this month. The valley has 150,000 acres of cotton planted this year.

Huntington Beach reports a large acreage of winter cabbage being signed up.

It is stated that the walnut crop in the Whittier, Fullerton, Anaheim, and Santa Ana districts is about 50 per cent of normal and of very high quality.

Instruction in fumigation was given to orange growers of Santa Ana last Tuesday by experiment station experts.

The canneries at Hemet have started on apricots, with more help being offered than they can use. The apricots are running to small sizes.

Ventura's County fair is reported as making satisfactory progress. The live stock exhibit this year promises to be better than usual.

At the recent annual meeting of the Santa Paula Bean Growers' Association W. H. Fleet was elected president, A. F. Waldon, secretary-treasurer.

At the recent meeting of the Fullerton farm bureau center, Manager Fleet of the Rancho Sespe described his method of pruning lemons in Ventura County.

Manager Thorpe of the California Walnut Growers' Association says that California will supply the United States with the greatest crop of walnuts ever known in the history of the industry.

The five sugar factories of Orange County will be a month late in starting this year. They will not start before the middle of August. The acreage planted to sugar beets in this county this year is 75 per cent of the usual.

Claremont Pomological Club recently held its last meeting for the season at Ganesha Park, Pomona. Addresses were made by Profs. Quayle, Lipman and Webber of the state university.

The Coast and General

Oregon had 54,741 motor vehicles registered June 1.

Arizona has 92,000 acres planted to cotton as against 46,000 last year.

Farmers of Lewis County, Washington, will hold their annual picnic July 27.

Washington reports nearly all fruits three weeks earlier than usual this year.

The Salt River Valley of Arizona last year produced 14,000 bales of long staple cotton.

Pendleton, Oregon, has a flour mill devoted to the manufacture of flour from wheat substitutes.

Apple growers of the Northwest are protesting against the proposed percentage freight rate advance.

Five new refrigerating plants will be constructed in France to freeze beef for our soldiers.

Plantings of potatoes on the Yakima irrigation district are less than last year.

The early June submarine campaign on the Atlantic Coast resulted in the sinking of 15,841 tons of sugar.

Canadian candy manufacture is limited to half the monthly average of last year.

Italy is harvesting her cereals, the acreage of which is practically equal to pre-war acreage.

Canneries at Yakima, Washington, are now at work on cherries. Beets and string beans come next, then pears.

Aphis has done serious damage to vegetable crops in Northern Washington. Peas, beans, and cabbage are affected most seriously.

Virginia apple growers are seriously embarrassed by scarcity of containers. Barrels, crates, baskets, and hampers are all lacking in quantity.

The Southwest Washington fair will be held on the fair grounds between Chehalis and Centralia, August 26-30.

The United States exported to the Allies in ten months ending April 30, 100 million bushels of oats and oatmeal and 39 million bushels of corn or corn meal.

Hawaiian agriculture, especially sugar production, has been hit hard through loss of its trained or specialized labor which has been drafted in the war.

The horticultural commission of Yakima County, Washington, is making a fruit tree census. Apples are the leaders, with well over 2,000,000 trees.

The department of agriculture of the Philippines has finished a very successful corn drive among the farmers of the islands. Effort is being made to secure the largest possible plantings to corn this year.

Berry growers of Whatcom County, Washington, are short of pickers as they say Canadian growers are offering better prices. This they are able to do as they are receiving five cents more per pound for their fruit.

Idaho preceded its threshing season by holding a series of threshermen's schools. These were conducted by the food administration and authorities of the state university. It is estimated that in some districts as high as ten per cent loss of wheat is incurred through careless or inefficient operation.

How to Determine When Trees Need Irrigation

By Robert W. Hodgson

IRRIGATION is of paramount interest to every citrus grower. The two most important factors in determining the location of a citrus producing area in Southern California are the frost hazard and the supply and cost of water. Of these two it is impossible to say which is the more important. However, it is possible, though not always profitable, to grow citrus fruits where there is danger from frosts, by means of orchard heating, whereas it is not possible to grow citrus fruits commercially without an adequate water supply for irrigation purposes. Citrus trees are evergreens and do not pass the winter in a dormant condition but continue to grow and transpire water vapor all the year round. In addition they are of tropical origin and not provided with adaptations conducive to the most economical use of water. They must therefore be supplied at all seasons of the year with a sufficiency of water to maintain the tree in a healthy condition.

In many sections the water supply is limited, and in order to use it economically and to its limit irrigation calendars or schedules have been devised whereby each orchard is irrigated at a set period varying from three to six weeks, which period is presumed to represent what is considered the average time elapsing following an irrigation before the trees again need water. This arbitrary arrangement of course cannot take into consideration the fact that the need of the trees for water is determined largely by climatic conditions. This is particularly true of citrus trees by virtue of the fact that they possess little or no control over their water loss, which is of course directly proportional to the intensity of weather conditions. The great variation in climatic conditions which may normally be expected during the summer and fall with the resultant variation in water loss from the trees makes irrigation at set periods unsatisfactory. Thus the soil moisture may be depleted in three weeks at one time of the season and not before five weeks at another. In case the irrigation period is four weeks the trees suffer at one time and could go for an additional week at another time. In view of the importance of keeping soil moisture conditions optimum, especially during the critical period, irrigation at set periods cannot be thoroughly satisfactory. It savors of the rule of thumb methods of years gone by. It may not be possible in every case to get away from this practice, but whenever it can be done water should be given the trees only when they need it, whether it be three weeks or five weeks following the last application.

This matter of scientific irrigation has been brought to the attention of citrus growers by a number of investigators in the last year or two, but the average orchardist does not as yet thoroughly understand how to put it into practical operation even where he has control of his water supply. Moreover, the terms used and the relations between certain constants are not clear to many growers, and the present article is written in the hope that it may clear up some of these misunderstandings.

What Water Is Used by the Tree

Water may exist in the soil in three forms, hygroscopic, capillary and free or gravitational. When a soil is air dried it still contains some water in the form of very thin films about the soil particles. This water is not available for use by plants to any extent and is known as hygroscopic water. When a soil is saturated with water and placed in a position where it can drain a certain amount of water drains off. This is free water and is not ordinarily available for plant use. After draining the soil still contains a certain amount of water which is lost on air drying. This portion represents the moisture available to the tree and is known as capillary water. It exists as films surrounding the soil particles and with the hygroscopic moisture constitutes the water holding capacity of the soil.

Irrigating Young Orange Grove
Nearly all citrus sections irrigated by the furrow method.

The water holding capacity of a soil depends largely upon the size of the soil particles, as well as somewhat upon their arrangements and the amount of humus in the soil and averages about as follows: Ordinary sand, 20-30 per cent; sandy loam, 30-40 per cent; clay loam, 40-60 per cent; heavy clay, 60-70 per cent; very rich garden soil, 70-90 per cent.

However, most plants, including citrus trees, grow best when the soil does not contain all of the capillary water it is possible for it to hold. Such plants require considerable air in the soil for their best development. The per cent of moisture at which the plant does best is known as the optimum moisture content and it usually lies between 50 and 60 per cent of the water holding capacity.

Moisture Equivalent

Soil physicists have felt the need of a constant by which they could compare different soils as to their water holding capacity. The moisture equivalent represents the per cent of moisture left in a soil after it has been whirled in a centrifuge and subjected to a centrifugal force of 1000 times gravity. It is merely an arbitrary standard for soil comparison, but the important thing is that a number of investigators have shown that the moisture equivalent of any soil lies very near the optimum moisture content, and therefore the moisture equivalent offers an easy method of determining the optimum moisture content. Lipman and Fowler working on the optimum moisture content for lemon trees have recently confirmed this finding. The moisture equivalent varies according to the size of the soil particles and organic matter content as shown in the following: Coarse sand, 4.6; fine sandy loam, 6.8; loam, 18.9; silt loam, 24.4; clay, 38.2.

Wilting Per Cent

As stated before, of all the water the soil can hold, excluding free water, not all is available for plant use. Most of the capillary water can be used by the plant, but below a certain per cent the plant cannot draw on the soil water. This per cent at which wilting occurs is known as the wilting per cent and it represents the hygroscopic water and in some cases a slight amount of capillary water. As is true with the moisture holding capacity and the moisture equivalent the wilting per cent varies with the size of the soil particles and humus content, averaging about as follows: Sand, 2.2 per cent; sandy loam, 2.5 per cent; loam, 5.0 per cent; clay loam, 6.5 per cent; clay, 10.5 per cent.

That portion of the soil moisture lying between the optimum water content and the wilting point is available to the plant, and what the irrigator desires is to prevent the soil moisture from reaching the wilting point and to keep as near the optimum moisture content as possible.

If the moisture equivalent is known, the water holding capacity, the optimum water content and the wilting point may be obtained by the use of certain formulas which have been worked out by soil physicists. The wilting point, which is the constant we are most interested in, equals the moisture equivalent divided by 1.84.

Depth of Irrigation for Citrus Trees

The first question to be decided is how deep should the soil in a citrus orchard be wet. This obviously depends upon the distribution of the feeding roots as it is manifestly wasteful to put costly irrigation water beyond the reach of absorption by the tree. Dr. J. Eliot Coit and the writer several years ago made a study of the root distribution of orange trees under average clean cultivation practices in a deep soil where no such obstacles as hardpan, which might prevent deep rooting, were present. We found between 70 and 80 per cent of the absorbing and feeding roots in the upper 30 inches. Jensen has recently found that citrus trees absorb no appreciable amount of water from the soil below four feet. We may then feel reasonably certain that if the soil is wet to a distance of five feet down, and kept wet to that depth, our trees will have a sufficiency of water.

How to Determine Optimum Moisture Content

The next question to decide is what is the optimum moisture content for my soil. This can be gotten at in a number of ways. A perforated can containing a known weight of dry soil can be saturated with water and then allowed to drain for several days protected from evaporation, and the water loss determined. This can be expressed in terms of dry soil, giving the water holding capacity. To get the optimum moisture content take 60 per cent of this. As pointed out above, the optimum moisture content and the moisture equivalent are practically the same, and the moisture equivalent may be obtained by the use of a centrifuge. The division of soil technology of the College of Agriculture at Berkeley has several of these machines, and Prof. C. F. Shaw, head of the division, when consulted by the writer on this subject, replied as follows:

"We will be very glad indeed to make moisture equivalent determinations up to the limit of our ability considering our available laboratory force. The sample for moisture equivalent determination should preferably consist of a quart of soil, taken as a composite sample representing the average soil from the surface to a depth of four or five feet. We can, in addition, calculate from the standard formulas at present available the total water holding capacity and the wilting point and can report these critical points to orchardists."

Once these constants are known to an orchardist all that is necessary is to take soil samples at intervals, determine the moisture content and, if it is approaching the wilting point, irrigate. If not, irrigation is not necessary. The moisture content is determined by weighing a quantity of the soil, thoroughly drying it, and dividing the loss multiplied by 100 by the dry weight of the soil.

Free Publications on Preserving Food

University of California

The university has published a number of bulletins, circulars and leaflets on food preservation. Copies of those still available will be found in the list given below. They will be sent free of charge on application to College of Agriculture, Berkeley.

Circular 146, "Jellies and Marmalades from Citrus Fruits."

Circular 158, "Home and Farm Canning."

Methods of Food Preservation I: "Canning Fruits and Vegetables."

Methods of Food Preservation II: "Fruit Juices and Jellies."

Methods of Food Preservation III: "Drying Fruits and Vegetables."

Methods of Food Preservation IV: "Candying Fruit, Making Fruit Vinegar, and Salting Vegetables."

"Home-Made Vinegar."

"Sterilization of Meats in Jars."

"Tomato Paste."

"Home Pickling of Ripe Olives."

Bulletin 287, "Vinegar from Waste Fruits."

U. S. Department of Agriculture Farmers' Bulletins

The following Farmers' Bulletins, with the exception of No. 183, may be obtained free of charge by writing United States Department of Agriculture, Washington, D. C.:

Farmers' Bulletins 839 and 853, Home Canning.

Farmers' Bulletin 841, Home Drying of Fruits and Vegetables.

Farmers' Bulletins 903 and 916, Commercial Drying of Fruits.

Farmers' Bulletins 183 and 913, Preservation of Meat (Smoking and Salting).

Farmers' Bulletin 203, Jellies.

Farmers' Bulletin 881, Preservation of Vegetables by Salting and Fermentation.

National Emergency Food Garden Commission Publications

Manual for Home Canning, Drying and Pickling.

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Citrus Canker Eradication

FOR more than three years the federal government and the Gulf States have been engaged in a joint campaign for the eradication from the United States of the disease of citrus fruit and trees called citrus canker. This undertaking is unique in character in that it is the first instance of the use of federal funds appropriated specifically for the eradication of a plant disease. It is of overwhelming importance to the citrus industry, because citrus canker has been recognized as the most contagious of all known plant diseases and the most destructive of commercial values.

When the disease was first recognized as a new one, an immediate and rapid inspection of the Gulf region by an agent of the federal horticultural board of the United States department of agriculture, supplemented by reports from state officials, indicated the occurrence of infected citrus trees in more or less widely separated and sharply defined localities from southeastern Florida to southern Texas.

Extremely Infectious

In outlining plans for the eradication of citrus canker emphasis has been placed upon the magnitude of the undertaking because of the extreme infectiousness of the disease and the wide area throughout which it has been disseminated. Owners of citrus groves were advised that whenever symptoms indicating this disease appeared they should take all possible precautions to avoid its spread, prohibit all visiting to the grove affected or those adjacent, stop all cultivating or other work, and send for a state specialist to determine definitely the disease.

Whenever a tree was found to be actually infected with citrus canker the course advocated was to burn it at once. Although this treatment is extremely severe it is the only one which has been found practicable and effective in checking the spread of the disease. This method of eradication, first used in Florida in the autumn of 1914, has been adopted throughout the entire region where citrus canker has been found, and additional safeguards not at first recognized as necessary were later employed.

The cooperative work of inspecting citrus groves and nurseries and destroying infected trees was begun in Florida immediately upon the approval of the urgent deficiency act of January 25, 1915, and shortly afterwards cooperative agreements for similar work were made with Alabama, Texas, Louisiana, Mississippi, Georgia and South Carolina.

Inspectors Disinfect Clothing

Inspectors for citrus canker were required to wear suits similar to the overalls worn by thrashing crews or garage mechanics, completely covering their usual clothes, also leggins and canvas hats, all to be completely and thoroughly disinfected in a 1 to 1000 solution of bichlorid of mercury before entering citrus properties and upon leaving them. At the same time inspectors were required to disinfect thoroughly their shoes, hands, and faces, and instructed to avoid touching any citrus trees when inspecting them, though if it became necessary to move a limb in order to thoroughly inspect a tree, this could be done with special precautions to avoid as far as possible the chances of spreading contagion from diseased spots not then visible to the naked eye. All apparatus taken into citrus groves, such as oil cans and special pumps for spraying oil or formalin, etc., had to be thoroughly sprayed with disinfectants before being taken from the orchard. Upon finding infected trees, the ground under the tree was sprayed thoroughly with a five per cent solution of formalin and, especially in properties where grove trees were of considerable size, the spraying with a one per cent formalin solution of all apparently healthy trees adjacent to infected trees which were to be destroyed was advised.

While these precautions are more extreme than have been found necessary in fighting any other plant disease, they are necessary on account of the extreme infectiousness or contagiousness of citrus canker; and partly because of this the success of the campaign for the eradication of citrus canker may be said to have established a new era in preventing and control work in dealing with plant diseases.

No Infected Trees in Florida

Throughout the extensive citrus developments in Florida no infected trees have been found for several months past, but since it is unlikely that all traces of the disease have been discovered and eradicated, it would be unwise to relax the rigid campaign of inspection until another growing season has passed.

In the other states concerned the work is somewhat complicated by the rather general practice of mixed plantings of susceptible and somewhat resistant types of citrus trees. In South Carolina, however, it has progressed so satisfactorily that it is unlikely that further work will be required during the coming year, while in Alabama, Texas, Louisiana, Mississippi, and Georgia a longer time will undoubtedly be necessary.

Citrus Canker and Australia

State Horticultural Commissioner Hecke gives warning to citrus shippers to use greatest care regarding shipments to Australia. The Cultivator has referred to the fact that Australians are very desirous of keeping out citrus canker and citrus canker is existent in the United States. The press of Australia has been loud and insistent in its calls for a quarantine against all citrus from the United States, including California. In order to forestall any possible attempt to repeal the proviso of 1916, which exempted California and Arizona citrus products from the general quarantine orders affecting this crop, Mr. Hecke addressed the department of agriculture of Australia on the subject, going into considerable detail in regard to canker and its status in California and Arizona and offering to furnish guarantees that there was no danger to be anticipated in allowing the importation of citrus fruits from the above mentioned states. Apparently this effort has borne fruit, as the state office is in receipt of a recent communication from the department of agriculture of Australia, stating that in the case of California and Arizona Australia will adhere to the proviso of 1916 and continue to allow the entry of citrus fruits subject to the following conditions, which are herewith quoted:

"Citrus fruits may be imported from the states of California and Arizona subject to the condition that each consignment be accompanied by an official certificate dated and signed by a responsible officer of the government, giving the name of the country of origin, name of state in which it was grown, identifying fruit and stating the quantity and certifying that the fruit was grown in the state specified, that citrus canker does not exist in said state, that the consignment is free from canker and all other diseases."

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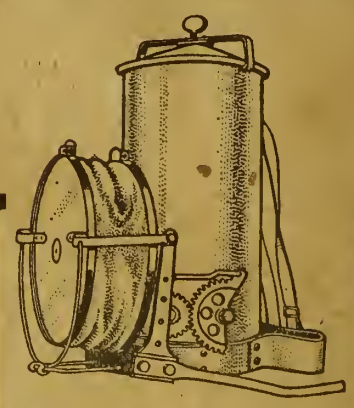

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Pear Growing in California

"Pear growing in California dates back over a period of approximately one hundred and fifty years, although commercially the industry amounted to little until more than a century later. The first trees were planted by the Franciscan Fathers on the grounds of their various missions, including Mission San Jose in the Santa Clara Valley. Strange to say, this valley which witnessed the beginning of the pear industry in the state has, up to the present time, been absolutely free from blight, the scourge of the pear orchard, which has spread throughout practically all other pear-growing sections in the United States and which has made the growing of this fruit unprofitable, if not impossible, without the application of extreme measures in its control. There are some very large seedling pear trees at Gaviota, Santa Barbara County, California, which are said to be at least 125 years old. The largest tree is about three feet in diameter and at least 45 feet high. They are very thrifty and except at close range look like oaks. Apparently blight has never affected them in the least. At San Rafael there are some old seedling trees which are said to have been planted in 1817. These are also hardy and free from blight.

"Since the days when the Padres demonstrated the adaptability of the pear and other fruits to California conditions, on the lands surrounding the missions, many of which are still standing amidst remnants of these old tree plantings, the pear industry has assumed such proportions that it is now one of the leading deciduous fruit industries of California. During the year 1916, according to the best available figures, there were 17,764 acres of pear trees in bearing and 23,325 acres that had not yet come into bearing in the state. In 1917 the bearing area was increased to 20,473 acres and the nonbearing to 28,069 acres. During 1917 there were shipped from the state 4798 carloads of pears. In addition there were dried in Lake County alone the equivalent of 3981 tons green fruit. The total production of shipping, drying and canning pears was approximately 90,000 tons."

The above quotation is from "Pear Growing in California" given in the Monthly Bulletin of the state commission of horticulture. That publication, by the way, has the most complete fund of information regarding the pear in California yet issued. It is written by Geo. P. Weldon, chief deputy commissioner of horticulture. It is largely illustrated, striking color plates being features.

Bean Growers' Annual

AT THE annual meeting of the California Lima Bean Growers' Association held in Oxnard last week, the following directors were elected: W. S. Saviers, Oxnard; B. F. Barr, Hueneme; C. C. Perkins, Camarillo; William Culbert, Somis; A. C. Vickers, El Rio; Roger G. Edwards, Saticoy; John Lagomarsino, Ventura; E. E. Stowe, Goleta; Alexander Jeffrey, Owensmouth; R. L. Owens, Van Nuys; W. C. Jerome, Santa Ana; G. W. Moore, Smeltzer; E. H. Jones, San Diego County; Edward Chaffee, Garden Grove. These directors have elected for officers: C. C. Perkins, president; Roger G. Edwards, vice-president; W. H. Stiles, secretary; W. S. Saviers, treasurer; R. L. Churchill, manager.

Final figures of the secretary and manager show that the members of the association have netted around $11 per hundred pounds. The expense of handling marketing operations was not far from 18 cents per hundred, or about 1.5 per cent of the selling value of the beans. The association membership has increased 130 per cent over that of 1916. The saving to the members in purchase of twine and bags was in excess of $30,000—this because of cooperation and early buying. From Manager Churchill's annual report we note regarding the difficulties confronting the producers that the bean market the past year has been affected by a number of extraordinary conditions for which the war was chiefly responsible, such as:

Five hundred per cent increase in the production of pinto beans in Colorado, New Mexico and western Nebraska.

Serious frost and rain damage to Michigan and New York bean crops, seriously decreasing their normal output of beans.

Vast increase in California bean production of varieties other than limas.

Heavy contracting in the spring of 1917 between growers and dealers and dealers and jobbers, when confronted with United States Food Administration regulations in the fall, very greatly stimulated speculation and the selling and re-selling of contracts between the holders of carload contracts, in the period from September 1 to November 1, and caused a great variation to continuously prevail upon all markets subsequent to November 1.

Congestion of railway lines and serious delay in delivery of cars caused about two months of the best buying and consuming period to be partially lost, and this condition combined with the effect of the enforced purchase and use by housewives of immense quantities of cereal substitutes for wheat flour resulted early in the spring in an unusually light consumptive demand for canned goods, dried fruits and beans.

The removal by ruling of the Food Administration of the speculative profits took with it the chief incentive on the part of many dealers for the handling of beans, and when, in addition, some of them were faced with loss due to declining market prices, they not only refused to be interested in purchasing more beans but were not very active in pushing the sale of stocks of beans they had on hand.

Mr. Churchill closes his report with a plea for loyalty to the association on the part of members and a plea to those who are on the outside to support their own industry by becoming members of the association. He said: "Each member of our association has his personal influence and his personal friends. If each will let it be known that he not only believes in the association but thinks that all bean growers should be contributing and sharing partners in it, such action would undoubtedly furnish just the boost necessary to push our association into the position where we should all like to see it placed."

The family tree is judged by its fruit.—Binghampton Press.

A GOOD WORD FROM ALPINE

If I were to compliment you on every good piece in the Cultivator I would be compelled to write a letter every week, but I cannot refrain from mentioning the excellent article on page 12 of the July 6 issue, nevertheless (Pig Feeding Contest in Glenn County, by Adviser Heileman). There is much in the experience of the boys that the average farmer might well consider and profit by.

Very few farmers in this country will hesitate in saying that the present prices of feeds are too high to allow a profit in raising hogs, yet these boys have demonstrated beyond a doubt that there is no reason why anyone should have refused to have raised a hog or two in the recent campaign. While I am not in the business myself, I did raise 24 this last spring at a good profit; and have 15 more about ready to go into the feeding pen.

The feed was all bought and hauled in by truck, that was not raised on the ranch (which was charged at market prices), and the results were very satisfactory, leaving a very large doubt in one's mind whether the average farmer keeps detailed accounts enough to enable him to know whether he is doing business at a loss or not.

Hoping you will have other articles of a similar character later, I remain. —D. H. Ogden.

WHITE FLY FROM OHIO

The following from the state horticultural commission furnishes an excellent example of the possibilities of receiving new and dangerous pests from unexpected sources through the agency of the parcels post. There was recently intercepted by the quarantine guardian at San Jose a package containing a small lemon tree. This plant was heavily infested with the citrus white fly, Dialeurodes citri, and also with certain unidentified leaf rollers. The plant in question came from McGregor Brothers Company, Springfield, Ohio. Coming as it did from a point so far north of the citrus belt as Springfield, Ohio, we would not be led to expect this species, neither would we look for citrus trees in this quarter. The secretary of agriculture of Ohio has been asked to investigate the matter, as there is a possibility that the plant came from some point further south and was reshipped from Springfield.

ENTOMOLOGIST IN CALIFORNIA

Dr. L. O. Howard, chief of the bureau of entomology, United States department of agriculture, is making a tour of California. In company with H. S. Smith, superintendent of the state insectary, he is now in the southern part of the state, where he will confer with the different members of his staff relative to entomological activities of his bureau in this state. He will also have an apportunity to see the work being done by California in insect control through biological methods.

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SYRUPS made from grapes, apples, and other fruits, can be used in cooking or on the table to replace sugar to a great extent. We give below methods of making which have proven successful.

Fruit Syrups for Table Use

Clarify the fruit juice. To do this heat to boiling and filter through a jelly bag till clear.

Divide into two lots representing one-fourth and three-fourths of the juice, respectively.

To three-fourths of the juice add two ounces (three level tablespoons) of precipitated chalk per gallon. Heat to boiling and allow to stand over night. Filter through a jelly bag to remove the chalk.

To the filtered juice add the one-fourth of the untreated juice. Boil the juice down to a syrup and seal boiling hot in bottles or jars. This syrup is low in acid and is suitable for use on griddle cakes, making gingerbread, etc.

Precipitated chalk can be bought from any drug store. If chalk is not used, the syrup will be very sour.

Preserves

Soft Fruits: Such as very ripe apricots, plums, raspberries, and very ripe peaches may be made into preserves satisfactorily by adding an equal weight of sugar, a little water to prevent scorching and by boiling down to the desired appearance and consistency. The preserves should be packed boiling hot and sealed at once to prevent fermentation or molding.

Firm Fruits: Such as pears, firm peaches, quinces, or watermelon rind, should first be cooked in a little water until tender. Sugar equal in weight to the fruit used is then added and the whole boiled down to a preserve. Firm fruits become tough and shrivelled if the sugar is added before they have been well cooked in water or a dilute syrup.

The desired effect can also be obtained by mixing the necessary amount of sugar with three parts of water, placing this on the fruit and cooking down slowly to a preserve, or test the boiling syrup as directed in "Hyrometer and Thermometer Tests."

Fig Preserves

Choose figs, preferably of some white variety and not over ripe. Puncture them with a silver fork thoroughly so that syrup will penetrate easily.

Place the figs in a kettle: Add one pound of sugar and two pints of water to each pound of figs.

Cook down very slowly until the figs have become a heavy preserve. Pack boiling hot in scalded jars and seal.

Strawberry Preserves

Weigh the berries and add one pound of sugar to each pound of berries.

Heat quickly to boiling and boil two minutes, not longer.

Pour into a shallow tray or baking pan and set in the sun until the liquid evaporates to a thick syrup and the berries have become plump. It will usually be necessary to cover the pan with a cheesecloth during the exposure to the sun to exclude flies. About a week's time will usually be necessary for the syrup to concentrate.

When they have reached the desired point, pack in jars or glasses and seal with paraffine.

Strawberries preserved in this way are much more attractive in texture, color, and flavor than those prepared in the usual household way.

Fruit Preserves or Butters without the Use of Sugar

Peel and pit the fruit. Add enough juice to prevent scorching. Cook till soft. Pass through a fine screen.

To the pulp add three quarts of apple or grape juice per quart of pulp and to each four quarts of the mixture, two teaspoons of ground cinnamon and one of ground cloves.

Or, if apple or grape syrup prepared as directed in recipe 1 is available, add one quart of syrup to one quart of pulp instead of using the juice as noted above.

Boil down to a thick buttery consistency. Seal boiling hot in jars or cans. This preserve will be very tart and will be suitable for a relish.

Hydrometer and Thermometer Tests

A syrup or preserve is done when it boils at 221 degrees Fahrenheit or tests when hot 61 degrees Balling or 34 degrees Baume. (See Circular 146 University of California, Berkeley.)

Gladiolus Growing in Southern California

NO FLOWER gives such whole souled and immediate satisfaction as the gladiolus. It blooms for almost 12 months in the year, is of exquisite beauty and is very prolific. Dr. C. H. Castle gives the following directions for its culture in The Flower Grower:

The culture of the gladiolus during a season is something like this; the field of course being dry is irrigated in the fall by flooding, say in the months of October or November. There may be rain but we do not depend on it. The ground is plowed as deep as possible with teams at least ten inches, cross plowed and harrowed twice each way. Then the furrows for the bulbs are laid off, 18 inches for hand cultivation and two feet apart for horse cultivation.

These furrows are made by the use of a small plow once each way in the row, throwing the dirt out on both sides. This leaves a ditch rather square on the sides, the width depending on the size of the plow used. Water is then run in the ditches to moisten the subsoil. The bulbs are planted any time thereafter, but I have secured better results from the plantings made from the 15th of December to the 1st of February. I use the same method for bulbs of all sizes only planting fewer across the row as the sizes grow larger. I have never planted single rows but as many as four flowering bulbs across the ditch at about twice the width of the bulb apart. Bulblets are planted broadcast in the ditches and covered the same as the bulbs.

The bulbs are covered by hand labor using the ridge on one side to cover the row next to it. I then apply a top dressing of fresh dairy or chicken fertilizer and leave the field till the sprouts show above the

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Figure the cost of your water supply per year on the basis of *service*—not first cost. When you buy an Eclipse Wood Windmill you get the most reliable water supply at the smallest cost. Eclipse mills after

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are still pumping water—*with no repair expense.* Go to your dealer and ask him about the Eclipse—its powerful superior construction, long life and many other features. He's ready to sell and serve you.

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Chicago, Illinois *Manufacturers*

$1.65 A YEAR

WITTE Kero-Oil Engines

Twice the Power at Half the Cost
Sizes 2 to 3011-P.--Select Your Own Terms -- Direct-from-Factory prices. Write your own order--Save $15 to $200. Prompt Shipment. Big new catalog, "How to Judge Engines" FREE-- by return mail, Postpaid.
Write Today
WITTE ENGINE WORKS
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Money Back if not satisfied on my New 90 Day Engine Offer

ground. When the stalks are about six inches high, and have two or three leaves, furrows are run between the rows about four inches deep and the dirt thrown up around the plants. This ditch is then filled with fresh fertilizer and watered by sprinkling. This is done every two weeks if there is no rain and is followed by cultivation. When the first buds are formed another layer of fertilizer is applied and watered thoroughly. This is the last food the bulbs are given and after the last cuttings have been made the field is allowed to dry off and when the bulbs are dug they are already cured and will stand shipment or storage.

In growing gladioli I have no use for well rotted or leached out manure except that it has been rotted into the field and I cannot see that the character of the soil or the chemical elements of it in the top four inches, that is the part above the bulb, is going to be of any use to a bulb that sends all its roots downward. (Because of bottom irrigation). The top soil to me is only a mulch to conserve the moisture and the fertilizer I put on the field each year furnishes the humus for the following year, while the liquid elements of the fertilizer are washed down to the roots where needed. I also use this method in the home garden, digging the ditches the width of a spade with distance enough between the rows to allow for cutting the blooms.

There is a great deal of satisfaction in being able to control absolutely the water, giving as needed and withholding if the plants seem to have plenty. At digging time there is no question as to whether your bulbs will dry as wished or not as you have control of these conditions. The tops are twisted off (better cut off), and the bulblets removed at the time the bulbs are dug, the bulbs are stored in crates two feet wide and three feet long and three inches in depth. These are made of slats with cracks wide enough to premit of the circulation of air through them.

The plants at this writing (March 0) are about a foot high and have had their first layer of fertilizer in the ditches as well as the top dressing applied in January. I expect to make the first cuttings of blooms about the first to tenth of May with the bulk of the cutting coming about Decoration Day. Of course there will be flowers before the above mentioned date but by commercial cutting I mean 500 flowers or more per day.

This is the natural time for the flowers that come from bulbs raised in this country and I am unable to see why under intensive cultivation as used in forcing these bulbs will not do better than bulbs whose natural blooming time is later. I note discussion regarding bulbs deteriorating with age and would say, that in my experience that the older the corm the more prone to suffer from disease. Undoubtedly they do lose in vitality in this country after the fourth year, becoming flatter and thinner and my best flowers are raised from the third year bulbs.

I also find that about 20 per cent of the bulblets will bloom marketable flowers the first year from most of the common varieties. The bulbs from bulblets grade about 20 per cent first size, 30 per cent second, and the balance third and fourth sizes. Formerly I grew about 100 varieties but last year put into the mixed bulbs all but the varieties which I shall grow, hybridizing from them and adding as the newer ones find favor. I have a number of seedlings that date back ten years and over and am adding to the collection each year. This is the most interesting work connected with the growing of the gladiolus as the crossing and record keeping is very simple and can be done by any amateur in his own garden and results may be had equal to any if care in the choice of varieties for the parents are used. The amateur is more apt to be careful and make "pets" of the flowers than the professional and that all adds to the results. There is a satisfaction in growing something new and original in one's own garden. I am unable to see the advantage of flowers five to eight feet in height as that condition generally necessitates staking and to date I have never had to use stakes either in the field or home garden. I might also add that a chart of the planting is always made with the date of planting, the origin of the stock, the age of the bulbs and any other data that might be of use. Later the number of flowers cut is added to the record of the bed.

In following up the bulbs that I have sold I find that the gladiolus is surely resistant to neglect, will grow and flower in most any kind of soil, from the mountains to the sea, and in all is about the easiest to grow and the most satisfactory flower in the garden. It is possible out here to have flowers from gladioli nearly every month of the year, one of the growers here cutting over 10,000 for the Christmas holiday trade. In the home garden the bulbs consist mostly of seedlings but in the field the varieties are as follows: America, Mrs. Francis King, Augusta, Peace, Sulphur Queen, Golden King, Halley, War, Mrs. Frank Pendleton, Mrs. Watt, Ida Van, Schwaben, Rouge Torch and Liebesfeuer. These have all been tested over several years growth and newer varieties are added and tested each year. There are many others in the mixed varieties including the ones above but the ones named are the most satisfactory to me and to the trade.

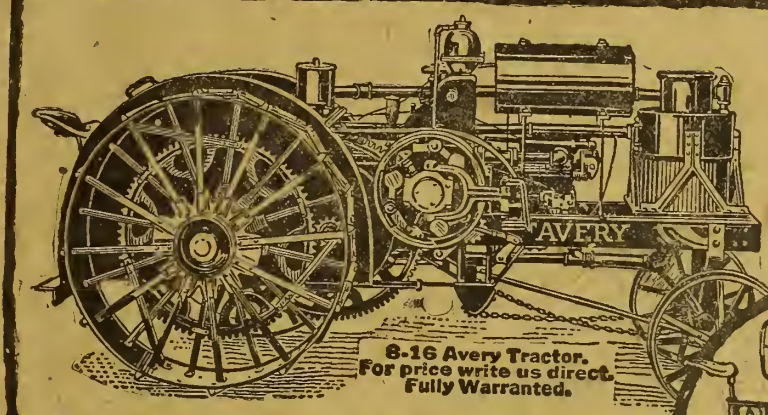
There is no doubt now that American grown bulbs and plants must be grown to supply the home market and I can only urge the amateur to insist on American grown bulbs and plants as there can be no question of their superiority over the imported stock.

Each year I learn more and more of the habits, needs of the plants and the general handling of the crop both in the garden and in the field and the work becomes more interesting. To the amateur who is growing gladioli for the first time I would say, buy named varieties, not too many kinds at first, of a reputable grower, cultivate the soil well and deep, give plenty of water and sunshine, and you will be well repaid for your money and work expended.

FOOD FOR GERMAN PRISONERS

The treatment of interned Germans in the United States is now being used by German propagandists in an effort to create unrest among the American people. The food administration, however, officially denies rumors that German prisoners are being prodigally fed on bread, pastries and cakes made entirely of wheat. The Germans interned in American detention camps while well fed, are being made to observe all rules and regulations of the food administration.

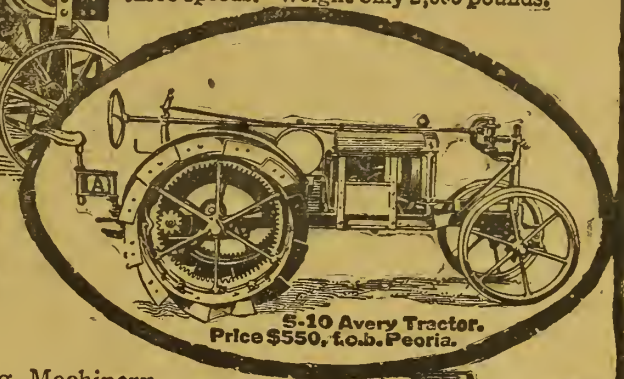
The military prisoners — prisoners of war—receive the regular garrison ration of the United States army. This is according to The Hague Convention.



8-16 Avery Tractor. For price write us direct. Fully Warranted.

The wonderful Avery 8-16 Tractor (to the left) pulls 2 or 3 plows and drives 19-inch threshers, etc. Fully warranted. Price includes a reasonable profit to dealers **who are obligated to supply Avery Service.**

The 5-10 Model B Avery Tractor (below) is **just the tractor for small farming, fifty acres or less.** Just the thing for truck gardening, fruit growing, etc. Gear driven selective type, three speeds. Weight only 2,000 pounds.


5-10 Avery Tractor. Price $550, f.o.b. Peoria.

Avery Gives the World Power for Every Farm Need

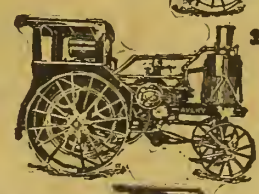
—For Every Size Farm and Every Kind of Work

THE complete line of Avery Motor Farming Machinery fills all power farming requirements for every size farm in the world. The Avery is the **one standardized, thoroughly proved complete line of motor farming machinery.**

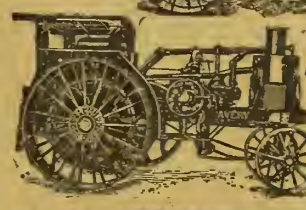
With one of the sizes of Avery Tractors, you can plow, prepare your seed bed, and plant **and harvest your grain crop.** With an Avery Motor Cultivator you can cultivate your corn, cotton, beans or any crop planted in rows. With one of the eight sizes of Avery "Grain-Saving" Separators, you can thresh all kinds of grain, kaffir corn, clover and other seeds. Every size Avery is a one-man outfit. For any kind of field work, belt work, or road work there is an Avery motor power machine that can be used safely, successfully and profitably.

Avery Tractors are entirely built in our own big factories and every part of an Avery Tractor (motor, radiator, transmission, etc.) is built **especially** for tractor work and **only** for the Avery Tractor. The Avery Company are builders—not assemblers. They specialize in motor farming machinery. Don't confuse the Avery Tractor and other Avery machinery with the ordinary assembled machine.

12-25 H.P. Avery Tractor For 3 or 4 plows and 22 in. Threshers


18-36 H.P. Avery Tractor For 4 or 5 plows and 26 or 28 in. Threshers

25-50 H.P. Avery Tractor For 5 or 6 plows and 32 inch Threshers


40-80 H.P. Avery Tractor for 8 or 10 plows and 36 or 42 inch Threshers

Some Special Avery Features

With the Avery Tractor you can unhitch from one machine and instantaneously hitch to another at the drawbar, or apply belt power. And you don't have to use a wrench to do either—the coupler is automatic and the belt pulley is always in place.

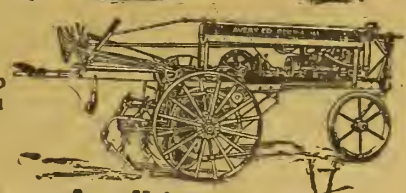
Avery Tractors are the only make with a Duplex Gasifier. It does the trick—turns kerosene or distillate into gas.

The Avery motor is low speed. Main bearings are adjustable from the outside. Patented inner cylinder walls are removable. All parts are accessible and every part renewable. With the three or four-plow Avery Tractor and an Avery Motor Cultivator, one man can prepare and cultivate two and one-half times the acreage of corn that can be raised with horses.

See the Nearest Avery Dealer

Go to the Avery dealer and select and buy the size tractor and equipment to meet your requirements (no matter how small or how large the acreage you cultivate) or write direct for complete Motor Farming Catalog.

Avery Company, 3916 Iowa Street, Peoria, Illinois.
C. S. Anthony, Distributor, Los Angeles, California.
F. H. Poss, Distributor, San Francisco, California.


Avery Motor Cultivator

Light and Heavy Tractor Plows for All Size Tractors

AVERY

Motor Farming Machinery

There's a size Avery Thresher for every size run

Where the Money for Farm Loans Comes From

I NEED a government loan to clear land so as to enable me to produce the food the government asks me to grow."

"If we have to give security for government money, what good does the federal farm loan act do me?"

"I thought the government would lend me money without all the old bother of examining titles and making me put up two dollars in security for every dollar loaned me. This is nothing but the old, old story."

"Why be so particular about the security for the government's money when what we need is food to win the war? Let us have the money. Money invested in the war is never lost if the war is won."

Have you heard such things as the above uttered when the federal farm loan act is under discussion? If you haven't you live in a neighborhood the people of which understand the facts. If you have you live where the federal farm loan act is misunderstood.

Not "Government Money" at All

In the first place, the money loaned to you through your national farm loan association is not "government money" at all. It is money borrowed from people who have it to be loaned to you. It is a trust fund. It is not "the old, old story," for it is loaned on easy terms and on very long time, but it must be secured just as completely as money borrowed from anyone else. It is not easy money. It is not easy to get, for the borrower must give ample security. It is easy to repay, because it is loaned for a generation or more of time, and is paid up in small regular installments —but it is not easy money in the sense that it can be had for the asking.

Even if it were "government money" it would be unfair if it were paid out to farmers without security. Government money belongs to all the taxpayers; and to lend it without good security to some taxpayers would be robbing Peter to pay Paul. But federal farm loan money is not government money at all. It is the money of people who lend it to the federal land banks. Why do they lend it? Because they want to help the farmers? Sometimes, and partly, perhaps, but every dollar loaned by these people to the land banks is loaned on a solemn promise that it will be paid back and as a sacred trust.

"Here is our money," say the investors; "take and loan it to the farmers; but we lend it to you only on your solemn promise that you will pay us our interest when it is due, and that the principal will be paid when it is due."

"We take the money," is the promise of the federal land bank, "and we solemnly promise on behalf of ourselves and the farmers to whom we loan it that the interest will be promptly paid and the principal when due."

The federal land banks belong, except for money temporarily invested in them by the government, to the borrowers. Therefore the promise of the banks is the promise of the borrowers. Every borrower has promised that the money invested by those who buy federal farm loan bonds will be repaid, principal and interest, not only in full, but on the very day it is due. The honor of the farmers is at stake, the honor of the officials of the federal land banks is at stake, the honor of the officials of the federal farm loan bureau at Washington is at stake, and the honor of the government which has established this system for the farmers' benefit is at stake.

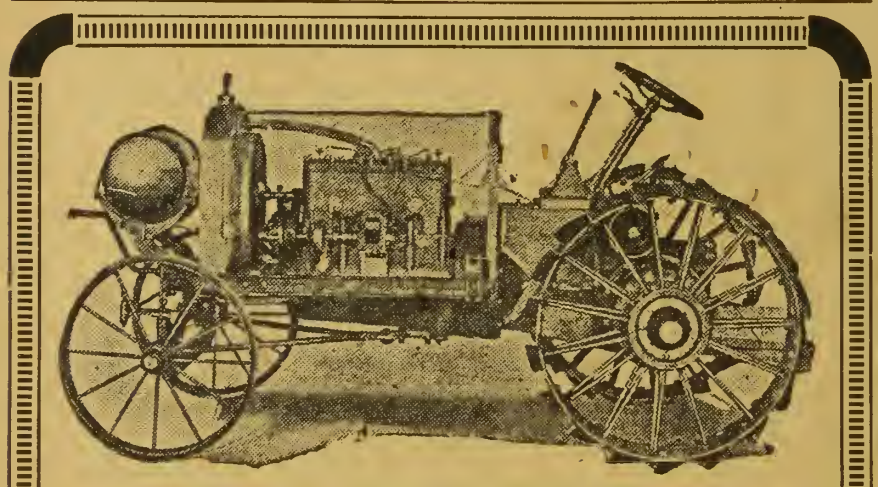
In order that every dollar may be paid when it is due, and absolutely in full, loans are confined to amounts not to exceed 50 per cent of the value of the land. If improvements are considered, the loans must not be made on them to an extent of more than one-fifth of their value, and they must be permanent and insured improvements. Improvements which are not insurable can not be considered, and insurable improvements must be insured.

Where the land has no agricultural value no loans can be made. Where the land is threatened with destruction by seepage, alkalifying, washing away, or the exhaustion of fertility, no loans can be made until the danger is done away with in some way. These loans run for 35 years, most of them, and loans will not be made on farms which are in danger of becoming worthless within that time.

Is this policy too strict? Not at all. It is the only policy which the farmers themselves ought to tolerate. If loans were carelessly made many farms would have to be foreclosed upon because the farmers could not pay them off. When they were taken under the mortgages they would not sell for enough to pay the mortgages. If they failed to pay the mortgages, the farmers would lose the money they have invested in the stock of their farm loan associations. If that failed to make up the losses, the farmers in the bankrupt associations would be liable to an assessment of another five per cent on their stock. If there were not enough collected thus, the capital of the banks would be drawn upon, as well as their surplus; and, finally, the federal farm loan bonds could not be paid. Long before that state of things could be reached investors would cease buying bonds, the banks would be unable to get money to loan, and the system would break down. We should revert to the old system of loans through mortgage companies for short terms only.

That is why the federal land banks are strict about security. That is why the federal farm loan system does not offer "easy money" to farmers who can not give the best of security.

And that is why every farmer who has money to invest should invest in federal farm loan bonds, which he can buy of any of the federal land banks or from the federal farm loan bureau, Washington, D. C. They pay five per cent interest. The interest is paid semiannually. They are exempt from all taxation. They offer a splendid field for the farmer who has money to invest. They can be had in small denominations—$25, $50, $100, $500, and $1000. If all the farmers who have money to invest will put it in federal farm loan bonds they can buy all the bonds of the banks.



As this Tractor looks with Hood, Seat, Fenders and Bonnet removed

This Bearcat
Worm-Drive Orchard and Farm Tractor

Will Give a Demonstration at Third Street and Lankershim Blvd., Lankershim

Next Sunday Afternoon, July 21st

We Want You There

It's your ideal 10-20 H. P. 2-3 plow machine. Positively DUST PROOF AND RUNNING IN OIL. 4 1-4x5½ motor, 900 Rev. Three Speeds: 1½ on low, 2½ to 3½ plow speed, 6 miles on road.

Low, Short and Narrow

Write or wire today for specifications
LIVE DEALERS WANTED
In Southern California and Arizona

W. J. Burt Motor Car Co.
Pico and Hope Streets, Los Angeles

Any quantity of water from 180 gallons up per minute. Ask for Catalog No. 30.

Layne & Bowler Corporation,
900 Santa Fe Ave., Los Angeles.

Teach Soldiers Tractioneering

Great numbers of men from the engineering corps of the army are going over there with a fund of information in tractor making and operation. The tractor is a great factor in modern war. Hence after months of drill and study of war methods the engineers are taken in hand by tractor factories and the final practical touch is given their education.

One such class or company of men was recently graduated from the J. I. Case T. M. Co., Racine, Wisconsin.

The men of the company were enlisted from nearly every branch of the engineering or construction industry, so of course many of them have had some experience in the care and operation of motor.

The school was divided into lecture periods where instructions were given by Prof. G. B. Gunlogson of the research department and his assistants, on shop work, repair work and actual field work. Most of the men have never plowed by means of a tractor before, but they picked it up in a remarkable fashion. Each man in the company plowed every day and also with a different size tractor or style of plow.

A rather unique method of tractor repairing was resorted to. One of the instructors would "queer" a tractor, and the student was instructed to get it to running—and they always did. Taken man for man, this bunch was as gentlemanly a crowd of young soldiers as one could ask to meet. They applied themselves strictly to business, and learned a great deal about tractors in a comparatively short time.

PLENTY OF SUGAR FOR CANNING

Through the new certificate plan of sugar distribution, which restricts the amounts which can be used by manufacturers in candy and confection making, the government will be able to amply protect California's sugar supplies in order that the housewives may obtain their full requirements for canning and preserving.

This statement is made to clear up the erroneous impression that because manufacturers of the less essentials are under regulation, a sugar shortage, which would hamper preserving and canning in the homes, is in prospect. Such is not the case. The manufacturers are being restricted in order that the full requirements of sugar will be available for domestic canning and preserving.

Housewives who do not desire to purchase their stock now for taking care of the fruit during the approaching season will have no difficulty in obtaining it when it is needed. All retailers will sell sugar for canning and preserving in any amount on the order of the customer, who will guarantee to use it for that purpose.

SIX RULES FOR PREVENTION OF FIRE IN GRAIN FIELDS

1—Keep your machinery in repair, well lubricated and provided with an air clarifier and a good spark arrester. Hot boxes and hot carbon cause 30 per cent of grain fires.

2—Always have at hand on the harvester at least two good chemical fire extinguishers. They keep little fires from growing up.

3—Don't smoke in the fields. Tobacco may be satisfying, but it's hot.

4—Break up big fields by cutting hay strips at intervals while grain is green. These give you a chance to fight and confine fire to a small area.

FAIR DATES

Monterey County Agricultural, Salinas, July 30-August 3, Secretary John J. Kelly.

Ukiah, Ukiah, August 5-10, Secretary Jos. F. Wadell.

Humboldt County, Ferndale, August, 21-24, Secretary W. F. Moore.

San Joaquin County, Stockton, August 22-24.

Napa County, August 22-24, Secretary E. P. Locharrine.

California State, Sacramento, August 31-September 8, Secretary Chas W. Paine.

Oakland Land Show and Exposition, September 9-October 6, Secretary Geo. B. Keefe.

Glenn County Livestock and Agricultural, Orland, September 16-21. Secretary E. A. Falk.

Kings County, Hanford, September 23-28, Secretary E. Gravatt.

Fresno County, Fresno, October 1-5, Secretary C. G. Eberhart.

Southern California, Riverside, October 8-12, Secretary R. L. Taber.

Sonoma County, Santa Rosa, October 10-12, County Farm Bureau in charge.

California Liberty, Exposition Park, Los Angeles, October 12-26, Secretary F. B. Davison.

OTHER STATES

Spokane Interstate, Spokane, September 2-7, Secretary, W. L. Tennant.

Washington State, Yakima, September 16-21, Secretary, Frank Meredith.

Idaho State, Boise, September 23-28, Secretary, O. P. Hendershot.

Oregon State, Salem, September 23-28, Secretary, A. H. Lea.

Utah State, Salt Lake City, September 28-October 5, Secretary, Earl J. Glade.

5—Plow several furrows around your grain field as a fire break. Your neighbor may not be as careful as you are.

6—Help organize your community and install fire fighting equipment at convenient points. Get ready now. After a fire starts it's too late.

BARLEY

Farmers' Bulletin 968, "Cultivation and Utilization of Barley," by Harry V. Harlin, is devoted exclusively to an account of barley as grown in the various barley sections of the United States; to its uses as stock feed, as pasture, etc.; and gives cultural information touching upon the placing of barley in rotations, the use of fertilizers, securing of good seed, preparation of soil, seeding, harvesting, shocking, threshing, cost of production, etc. The book opens with the statement that "Barley should be more widely grown in the northern and western states." Perhaps it should be, but barley growers in one western state are anxious to learn as to a price which may be depended upon in a year like the present.

Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Tomato Blight

Can you tell what is the trouble with tomato plants that are well cared for and have good color, in sandy soil, fairly fertile. The leaves for two weeks or more have a tendency to fold lengthwise and the plants have a slight appearance which we call wilt. Do not see that they grow worse except that more plants become affected. Can not find any insects.—Subscriber, Redlands.

It is impossible to tell from the specimen of leaves sent what the trouble is, but from the above we believe it is a case of summer wilt, blight, or fusarium. If it is this trouble then there is no help for any of the plants for the disease has attacked the roots and no treatment can restore them. If the roots may be sent they will be submitted to experts, but presumably the inquirer will know by this time whether the trouble is this form of blight. If it is blight, then every plant which is affected should be pulled up and burned. This may possibly prevent further spreading, but probably it will not for the reason that the bacteria may have been introduced with the plants. Another year use care in securing blight free plants and plant on soil where there have been no diseased tomato plants grown for some years.

Eating Walnut Leaves

The leaves of my walnut tree are being eaten up. What can I do to prevent this?—Subscriber, Ripon.

The leaves which accompanied this inquiry showed that some leaf-eating insect was affecting them, but worse, the telltale black spots show the young growth is also affected with walnut blight. For this there is no treatment, and as the leaf eating does not indicate serious enough condition to justify expensive spraying of such large trees we do not see that any treatment can be recommended.

Bean Thrips

Am enclosing some leaves from my Kentucky Wonder beans. Can anything be done to check the spread of these insects? This is the third year they have taken all of my beans; the leaves drop off and the blossoms wither. Mexican beans planted next to the pole beans were not affected last year.—Subscriber, Oroville.

These leaves have been infested with bean thrips or other mites like the red spider, and they are easily killed, the principal trouble being the tender nature of the plant usually infested. Sulphur and tobacco decoctions are good. Use commercial lime sulphur (33 degrees Baume) 5½ gallons, water 200 gallons. To this may be added 14 fluid ounces 40 per cent nicotine sulphate. Another remedy recommended by Essig is nicotine sulphate one part to 2000 parts oil emulsion or miscible spray.

Walnuts

Do walnuts do well in San Diego County?—Subscriber, Lemon Grove.

There are some sections in San Diego County in which the walnuts will do exceptionally well. They require a deep loamy soil with water table not too near the surface. It is possible that in the interior where the heat is greater they might be sunburned.

CONTROLLING THE ALFALFA WEEVIL IN UTAH

A parasite of the alfalfa weevil brought to Utah from Italy by H. S. Smith when with the federal department of agriculture, is becoming a considerable factor in controlling this pest. Observations in the infested fields indicate that the percentage of parasitism went as high as 70 per cent of the individuals. With such valuable assistance the danger to the alfalfa industry that may be anticipated from the introduction of the weevil into California is considerably reduced.

Wetproof Steel Lined Shot Shells

A WET day is indeed a good day for ducks to the hunter who has the *right* shotshells in his pockets. Remington UMC Smokeless "Arrow" and "Nitro Club" Wetproof Shotshells do not require fair weather to keep in good condition and work *right* through the gun. They may be exposed to wet for hours but will not soak through—the water can not get in, can not swell them, soften the turned-over end or bulge the top wad. Mauling them around in the wettest coat pocket can not scuff them. Remington UMC makes them *right*.

This is something every farmer who loves duck hunting will learn with profit—it will make those idle wet days in the Fall welcome ones.

Remington UMC for Shooting Right

The result is virtually a new type of shell, embodying the most important improvement in shotshell manufacture in over a decade.

These are the first *completely* wetproof shotshells—an exclusive feature of the Remington UMC "Arrow" and "Nitro Club" brands for shooting *right*.

You just buy the same old favorite Remington UMC "Arrow" or "Nitro Club" Steel Lined Speed Shells, at the regular price, and you get the new Wetproof feature thrown in besides. A shell that is sure fire, gives top speed, best pattern and most penetration, and has in addition the wonderful quality of staying dry as dust inside and hard and smooth as glass outside even when subjected to the wettest weather conditions.

It took three years to perfect this waterproofing process. Special paper had to be produced for the shell bodies, a special formula discovered for compounding the *right* combinations of waxes and oils, new machinery developed for applying the waterproofing so as to work it *into* the shell as a part of it, positively sealing it against hours of wet, and new methods devised for giving the shell the same *right* finish as before.

In *black powder*, buy the old reliable "New Club," now Wetproof sealed at turnover and top wad.

Sold by Hardware and Sporting Goods Dealers in Your Nearest Town

Keep your gun in best condition with REM OIL, the combination Powder Solvent, Lubricant and Rust Preventive

THE REMINGTON ARMS UNION METALLIC CARTRIDGE COMPANY, Inc.

Largest Manufacturers of Firearms and Ammunition in the World

WOOLWORTH BUILDING NEW YORK CITY

PURE BRED REGIST'D HOLSTEINS

Tuberculin Tested State Supervision

Production Butter Fat Everything Guaranteed

King Korndyke Pontiac

(shown above)

Is getting just the sort of calves that we want in our herds, beautiful individuals, nicely marked, and a very large percentage of them are heifers.

Most everyone knows that he is a son of the great and only King of the Pontiacs, but have you stopped to consider what his sisters are doing right here in California? One of them, K. P. Tola Joe, holds the state record for a senior two year old with 27.18 pounds butter in seven days; another, K. P. Idyl Segis, has just broken the state junior four year old record with a production of 35.78 pounds butter in seven days; another, K. P. Tola, made over 34 pounds butter in seven days as a senior four year old; and K. P. Tola Joe came back as a senior three with over 32 pounds butter in seven days.

Why not put a choice young son of King Korndyke Pontiac at the head of your herd? One of his sons sold for $6500.00 at public auction showing the value that the best breeders place on this blood.

We are pricing his young sons at figures that dairymen can well afford to pay, and you will be pleased with the liberal terms we make. Visit the farm or write us now.

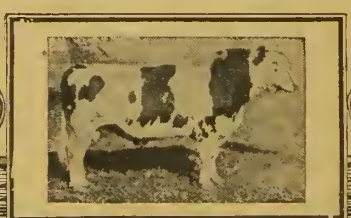
Below is our other great herd sire

Prince Gelsche Walker Korndyke

JANE GARDEN FARM

SACRAMENTO — CALIF.

FRED W. KIESEL, PROP'R. C. W. YOUNG, SUP'T.



Individuality Breeding

Put the Best Blood in Your Herd

The cow making the highest official yearly butter record for 1917-1918, as shown by the report just issued by the Holstein-Friesian Association of America (and it is the world's official record for one year) is Aaggie Acme of Riverside 2nd. She is out of the same dam as our senior herd sire

Prince Riverside Walker

The junior three year old heifer making the highest yearly butter record for 1917-1918 as shown by the report just issued by the Holstein-Friesian Association of America, is Miss Valley Mead De Kol Walker. She is by the same sire as our senior herd sire, PRINCE RIVERSIDE WALKER. Buy your herd sire in the blood lines that are doing things TODAY and that will increase in value in the records they are bound to make in the TOMORROW.

We have just a few good bull calves by PRINCE RIVERSIDE WALKER, out of splendid dams. They move young at our prices.

Our Entire Herd is Tuberculin Tested

Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

You Can Own a Grandson of Tilly Alcartra

and breed into your herd the blood of that greatest of all long distance producers, and you can buy him at a price that you can well afford to pay even though you have only grade cows.

We have some choice young bulls sired by our herd sire

Prince Alcartra Korndyke

and out of well bred, good record dams. We price them well within their value, and have been able to please buyers from the far ends of California.

PRINCE ALCARTRA KORNDYKE is out of Tilly Alcartra and is sired by Korndyke Queen De Kol's Prince, an exceptionally good combination of breeding. His daughters are making great yearly records and his sons are bound to transmit great production of milk and butter.

The J. S. Gibson Co.

Williams California

Northern California Notes

Written for California Cultivator By W. S. Guilford

HOW much grain has been irrigated in the Sacramento Valley this season?" asked Frank Adams of the United States bureau of irrigation investigations on a recent visit.

As far as we were able to tell him the acreage is very small, but the results of this season's experience will undoubtedly cause this to be considerably increased in 1919. Captain M. T. Jones of Butte City is harvesting a field of grain now that he irrigated early in the season. He estimates that the yield is ten sacks greater than it would have been without the irrigation. The crop is yielding about 25 sacks per acre. Some of the best yields in Glenn County are on fields that were in corn last year and that were thoroughly irrigated last season. The "hold over" moisture from last year, in addition to the limited rains of last winter, provided sufficient for 18 to 30 sack crops.

Double cropping is becoming a more common practice each year. Grain crops harvested late in May or early in June are followed by corn or beans. The land is plowed and thoroughly flooded after the grain is cut, a good seed bed prepared and the second crop planted.

On the River Farms Company properties in Yolo County the grain this year on land in beans last fall (following the 1917 grain crop), showed a big increase in yield over crops on land that did not have a second crop.

It has been found advisable to cut the grain crop with binders—instead of combined harvesters because it can be cut greener and removed some days earlier. Additional harvesting cost is made up in getting the second crop planted earlier and in the additional value of the straw.

Profitless Dairy Cows

There was never a better time than now to "cash in" dairy cows that do not make a profit. Many Sacramento Valley dairymen are doing this. Cows that slow up in their milk flow four or five months after freshening and begin to take on fat will bring from $60 to $90 apiece for beef, and it is certainly good business to sell them. Feed will be scarce and high in price everywhere this winter, and if they are kept in the herd they will eat a good many dollars worth of feed and be worth less money next spring than now.

Small Flocks

The small flocks of sheep are increasing very rapidly on the small farms in Northern California. It takes some time to get used to having a flock of sheep around, and they are some bother," said one farmer recently, "but they have made more money for the investment than anything else on the place."

The Glenn County farm bureau shipped a carload of wool recently which was made up of small lots from these small flocks. I know of one flock that was started with nine head in 1917 and which now numbers 33.

A few sheep on a farm not only get plenty of feed—generally but there is great variety, and the animals should be in the pink of condition at all seasons of the year. This insures a big crop of strong, healthy lambs and a maximum weight of fleece. In range flocks where there are fat and lean periods of feed this condition is shown in the growth of the fleece.

Where cows are kept and silage fed, a few forksful of silage a day will provide splendid succulent feed for the sheep after lambing and at any other time when feed is dry.

Berkshire Progress Praised

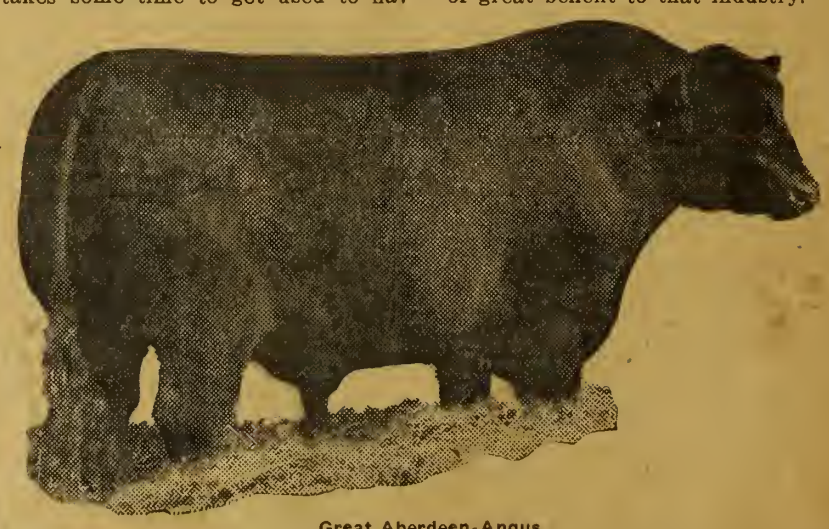
C. H. Gentry of Detroit, Michigan, a cousin of N. H. Gentry of Missouri, the famous breeder of Berkshire hogs, was a recent visitor to Glenn County. It will be remembered that N. H. Gentry bred the great boar Longfellow, to which practically all Berkshires in America trace. The notable exception to this is the Gossard herd of English Berkshires about which there is so much discussion in Berkshire circles now.

C. H. Gentry was very much pleased to find so many fine Berkshires in California and predicts a particularly bright future for the pure bred live stock industry here.

Whenever a number of enterprising farmers or stockmen in any community raise stock of any one breed, their success is sure to be greater than when only one breeder is engaged in the business. Glenn County Berkshires are gaining a large amount of national publicity, and eventually buyers will be attracted from all over the world.

Glenn County Fair

Plans are under way for a splendid agricultural exhibition at Orland this fall. The Glenn County Fair Association has bought the grounds in the town of Orland on which the fair was held last fall. Permanent improvements are now in process, fences have been built and a great many fine trees were planted last spring. Glenn County is one of the leading pure bred live stock centers in the West, and this fair is one of the things that will be of great benefit to that industry.



Great Aberdeen-Angus

Blackcap Poe sold for $9200 at the Escher and Ryan Ranch, Iowa, to A. D. Wilcox of Muscotah, Kansas.

Mesquite Beans in Arizona
Collected by Indians and ready to be ground and fed to hogs. Photo by E. P. Taylor.

Hay Conservation

I believe that every one planning to build a hay barn should give particular attention to the question of cut hay. There is a growing tendency among all the stockmen I know to favor the feeding of cut or chopped hay. There are many whose plans for the future include the installation of machinery to do this work. They may not get around to it for a year or two but they hope to get it done soon. I would be glad if we were equipped to cut our hay for the Shorthorns and Shropshires at Butte City Ranch.

To be able to eliminate the losses that are sure to occur in feeding loose hay is a big item. When the stems and branches of alfalfa are cut up fine everything is eaten, and this without waste if the feeding troughs are properly constructed.

I understand that when cut hay is stored in barns of ordinary construction the sides are apt to be forced out on account of the very much greater pressure. In building a new barn it would be well to consult some one who has built a barn to hold cut hay.

Grasshoppers

There are a good many grasshoppers in the upper Sacramento Valley this season. A grasshopper poison recommended by the Glenn County farm bureau last year that proved effective consists of the following: Paris green, one pound, blackstrap molasses, two quarts, lemons, ground fine, six quarts; bran, 25 pounds; water, four gallons.

Mix the molasses and water, dissolve the Paris green in a small quantity of water and add this and the lemons. Sprinkle the solution over the bran and stir thoroughly. This will cover about five acres. It is claimed that if it is sown thinly there is no danger of poisoning stock.

Five years ago—when the Monroeville orchard was planted, we had a bad infestation of hoppers. We used poison and it killed thousands, but there were thousands more. Over 5000 young trees were covered with mosquito netting in order to keep them from being defoliated.

MESQUITE BEANS AS FEED

By E. P. Taylor, Director Agricultural Extension Service, University of Arizona

An interesting instance of utilization of the native mesquite bean so abundant in parts of southern Arizona was observed upon two ranches in the Yuma Valley last year. W. C. Horan of Bard, California, across the Colorado River from Yuma, fed 390 hogs upon mesquite and screw beans. E. T. Sanguinetti of Yuma bought and fed to hogs between 20 and 40 tons of mesquite and screw beans which were gathered by Indian women in the Colorado River Valley and for which they were paid $18 to $20 per ton. A part of the beans were fed along with cocoanut meal and the results were satisfactory, though it was found that the hard bean seeds should be ground before feeding, as otherwise they were so hard they passed through the animals undigested. A rich sugar is within the pods. The mesquite bean crop promises to be good again this year, and the range cattlemen will profit thereby.

N. H. LOCKE JERSEY SALE

Written for California Cultivator by C. A. Briggs

Unsettled conditions of labor and feed are the factors that are making sales of cattle rather unsatisfactory to the seller at the present time. N. H. Locke's famous show ring herd of Jerseys sold at Lockeford July 6 by the California Breeders Sales and Pedigree Company was no exception to the rule. Prices ranged very low, much below the real value of the animals sold. The top prices paid were $510 for the celebrated Empress Lass knocked down to G. A. Moore, Ripon; $500 for Valets Golden Biddy of L to J. E. Thorp, Lockeford.

The fine stock in this dispersed herd will add much to the building up of the many herds to which they went. The sales were mainly to dairymen in San Joaquin and Stanislaus Counties. M. A. Luce of Santa Rosa was a large buyer. Chas E. Hughes, manager of the sales company, conducted the sales, with Col. Ben A. Rhoades of Los Angeles and Col. D. L. Perry of Columbus, Ohio, acting as auctioneers.

ARIZONA HAS DAIRY COMMISSIONER

W. A. Barr, who has been for the past year agricultural agent of Maricopa County, and who was to have been transferred in the agricultural extension service of the university to the position of state live stock specialist, has been appointed by Governor Hunt to the position of state dairy commissioner.

This position was created at the late special legislative session as a war measure at the request of the dairymen of the state whose industry was greatly hampered and threatened in Arizona by the present war conditions.

Mr. Barr is an experienced dairyman and technically trained dairy expert, and while county agent of Maricopa rendered the dairy interests marked service which was greatly appreciated by the dairymen. They are especially pleased now with the appointment of Mr. Barr as state dairy commissioner.

State Fair at Sacramento, August 31 to September 8.

Serviceable Holstein Bulls

Best of Breeding at Bargain Prices

Why not head the herd with a son of KING MEAD OF RIVERSIDE, one of the very greatest proven sires of the Holstein breed. During the past year two of his daughters have completed strictly official year's records of 1215 and 1331 pounds butter, the latter record standing as the world's strictly official record. All of his daughters that have been tested for the year average over four per cent butter fat, which can be said of no other sire of the breed with over five tested daughters.

We can offer sons of this great sire as low as $250.00 out of well bred cows with high A. R. O. records. The dams of several of these have records above 800 pounds butter. His sons are all good individuals.

Also offer a few excellent sons of KING MORCO ALCARTRA, whose dam, TILLY ALCARTRA, is the greatest long distance producer in the world. She is now making the greatest record of her career, having produced in the first six months 18,750 pounds milk and 775 pounds butter. This is her fourth consecutive year above 1040 pounds butter, three of which will be above 1190 pounds.

Have also two or three very fine sons of SIR AAGGIE DE KOL ACME at serviceable age from high record dams. SIR AAGGIE is out of AAGGIE ACME OF RIVERSIDE 2D, holder of the world's strictly official yearly record and the two year record of 2426 pounds.

We are offering these young sires at surprisingly low figures, and no dairyman should overlook the opportunity. Their pedigrees and prices will be mailed on request.

A. W. Morris & Sons Corporation
Woodland, Cal.

Santa Anita Rancho

Anoakia Breeding Farm

Registered Holsteins

Depth of body is a prime requisite in the high producing dairy cow, and is especially desirable when found in combination with other outward evidences of dairy quality. Great deep bodies are outstandingly characteristic in the offspring of

Merci Lad Korndyke Burke

our senior herd sire, who is by De Kol Hengerveld Burke and out of Winnie Korndyke Cornucopia De Kol, 31,034.1 pounds milk and 1201.00 pounds butter in one year, the first cow in California to produce that amount of butter in one year.
We have a few of his sons, out of good record dams, for sale.
Inquiries or orders by mail will receive careful and prompt attention.

SANTA ANITA RANCHO *Santa Anita, Cal.*
Anita M. Baldwin, Owner *W. H. Taylor Supt.*

Come to Stanislaus County for Registered Holsteins

STANISLAUS COUNTY LEADS
All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

Pelandale Holsteins
Headed by Hazelwood Mercedes Posch Ormsby. Good young bulls and a few registered cows for sale.
J. A. Pelanda, Rt. B, Modesto, Cal.

HOLMES STOCK FARM
Registered Holsteins of best breeding. Young bulls for sale.
R. L. Holmes Modesto, Cal.

Segis Pontiac De Kol Dutch
Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. E. E. Freeman, Rt. B, Modesto

Thompson's Registered Holsteins
Young bull calves for sale with yearly record backing.
Luther Thompson, Rt. A, Box 351, Modesto Cal.

Registered Holsteins
Young sons of Prince Hiske Walker out of A. R. O. dams for sale.
H. E. Cornwell, Rt. B, Box 183, Modesto, Cal.

SUNNY STANISLAUS
The county where "Water—Wealth—Contentment—Health" as well as the county where are some of the finest dairies in the world.

Our Senior Herd Sire is KING KORNDYKE HENGERVELD ORMSBY 7th
Five of his sisters sold at public auction for $23,800, an average of $4760.
This blood has made some of the world's greatest producers.
Our junior herd sire is TOYON KING KORNDYKE SOLDENE, son of a 33.23 pound daughter of King Hengerveld Aaggie Fayne.
Young bulls for sale. No females.
REGISTERED BERKSHIRE BOARS, sons of the $1500 boar Star Leader, for sale.
Kounlas Registered Stock Farms, Modesto, Cal.

YOU can save from $6.00 to $12.00 in fattening each hog by feeding Globe A-1 Hog Feed (10 per cent dry buttermilk) and you can save from four to six weeks' time. This is not laboratory theory, but actual results of feeding tests.

Successful Feeder's Opinion

Mr. Green, of Willits, Patterson & Green, whose drove numbers nearly 2000 animals, says:

"We shall continue to use your A-1 Hog Feed as the results obtained are extraordinary.

"A feed that will put nearly two pounds average daily weight on a hog weighing about one hundred pounds is a product that no hog feeder can afford to overlook.

"WILLITS, PATTERSON & GREEN,
"Per R. S. Green."

[Fact Book, packed with valuable feeding information, sent free]

Globe Mills
905 E. 3rd St., Los Angeles, Cal.

The DRY BUTTERMILK DOES IT

HOLSTEIN-FRIESIAN CATTLE

From my herd of 75 registered Holsteins, can spare ten yearling heifers and heifer calves splendidly bred, closely related to 30 and 40 pound cows.

One bull calf, whose eight tested nearest dams averaged 31 pounds weekly butter record.

One service bull from 29 pound dam. One hundred and two pounds milk one day. His two nearest dams through sire yearly record average 21,000 pounds milk and 812 pounds butter.

Write me for low prices and further information.

Frank Reed Sanders, Mesa, Ariz.

Prize Winning Berkshires

Two High Class Jr. Boars, choice $65.00. Six Fall Boars, choice $50.00.
Sired by Ames Rival.

F. P. Hall Perris, Cal.

Livestock Premiums

The California State Agricultural Society has hung up money prizes totaling nearly $30,000 for competition in the live stock show of the 1918 California state fair. In addition the usual ribbon awards, considered by many exhibitors to be of even greater value than the cash premiums, also will be made.

This year for the first time Pacific Coast livestock breeders showing at the state fair will be able to play to a regular circuit, which is to say that they won't have to depend upon the premiums to be given at the one show alone to defray the heavy cost of conditioning their stock for show purposes but will have the opportunity of competing for the cash awards to be made at a succession of California shows immediately preceding and closely following the state fair.

The state fair opens August 31. Five county fairs all of them with livestock exhibitions as their main feature, will be held during the month before. They are: the Monterey County Agricultural Association Fair at Salinas, July 30 to August 3; Ukiah Fair, August 5 to 10; Ferndale Fair, August 19 to 24; San Joaquin County Fair at Stockton, August 22 to 24; also, Napa County Fair, August 22 to 24.

Soy Beans for Hogs

There has been more interest this year in soy beans than any preceding year. Whether this crop will prove satisfactory and profitable in California in view of the low price for which it may be imported is a question, that is, considering the raising of the bean as a commercial proposition. But for hog feed, we note a writer in the Farmers Review makes a point in its favor. He says:

Soy bean hay makes an excellent brood sow feed during winter months. Throw a good sized forkful out to each three or four sows each day, and it will furnish them with the necessary nutrients to go along with the other grain, besides supplying them a bulky feed and keeping them busy a portion of the day.

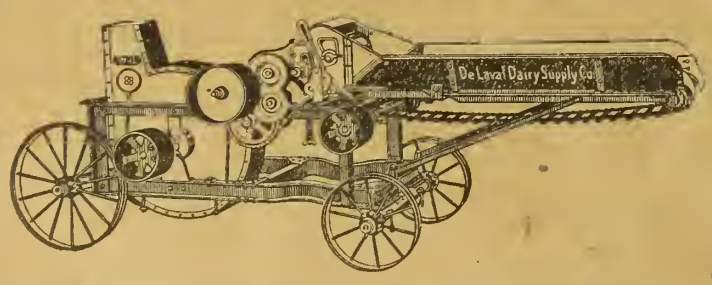
Soy bean seed fed alone, or if constituting much over one-fifth of the ration, is too laxative for swine if fed for any considerable length of time. As has been suggested before, they are often worth more for seed than for feed after having been threshed, if of good enough quality for seed. Cull or cracked beans can, however, be profitably fed either whole or ground, but better results are equally secured where they are rolled or ground than if fed whole. Small pigs seem to be more subject to scours when eating soy beans than are the older hogs, but if beans are used in moderate quantity, for instance up to one-sixth of the total ration, no bad results will usually follow. On the contrary, the pigs commonly do better for receiving them. Corn six parts, middlings two parts, and soy bean meal one part makes a very satisfactory ration when the middlings and beans are fed either dry or in slop. The same feeds can also be self-fed, although it is best not to put the feed in self-feeders before the pigs weigh about 100 pounds as an average. Similarly, we find that pigs under that weight do not do as well in the cornfield, either with or without soy beans in the corn, as do those which are heavier in weight.

There is still much to be discovered about soy beans. We may learn to extract the oil and have remaining a soy bean cake of greater proportionate value than the beans; and we may find better combinations of rations than we now know. But even if we do not, it seems that this crop has already demonstrated its usefulness to such an extent that we must recognize it as a successful crop in connection with corn and as a probable

An Orland Beauty

Imported Brilliant Spray, 241304, three times grand champion, California. She is owned by Dr. H. W. Hand, Glenn County.

ACME



Feed Cutter and Silo Filler

Steel Frame Construction
Lawn Mower Type Knives

THE knives of the Acme produce a clean cut silage of even lengths that packs well in the silo. The ALL STEEL FRAME adds strength and durability to the machine. Prevents wear and vibration by holding all bearings in perfect alignment. Can't warp or sag. Strongly riveted—no bolts to jar loose.

A Size for Every Dairy—Catalog on Request

De Laval Dairy Supply Co.
IDEAL GREEN FEED SILOS : : : AEPHA ENGINES
61 Beale St. San Francisco

DR. HESS DIP and DISINFECTANT

A Dip that is standardized, of uniform strength and GUARANTEED. One gallon makes 70 gallons of dipping solution.

For Scab, Ticks and Skin Troubles

Dr. Hess Dip and Disinfectant cleans and makes the skin healthy. It is more than a Dip—it is also a Disinfectant. Use it freely about stables, hog pens and poultry houses to destroy disease germs and maintain good health conditions. Also for home use, in garbage cans, sinks, cesspools. Sold by 28,000 dealers on a money-back guarantee.

Dr. HESS & CLARK
Ashland Ohio

Our Country Needs Livestock and Poultry

Kreso Dip No. 1
for
FARM SANITATION
will keep Livestock and Poultry healthy.

KRESO DIP NO. 1
EASY TO USE.
EFFICIENT. ECONOMICAL.

Kills Sheep Ticks, Lice and Mites; Helps Heal Cuts, Scratches and Common Skin Diseases.

PREVENTS HOG CHOLERA.

WRITE FOR FREE BOOKLETS ON POULTRY AND LIVESTOCK.

Animal Industry Department of
PARKE, DAVIS & CO.
DETROIT, MICH.

SAFETY

We believe our conditions of sale are as definite and favorable to the buyer as it is possible to make conditions covering anything as variable and flexible as living animals.

Safe sales are good for the buyer and best for the seller in the long run.

We accept high class registered animals in our consignment sales, or will sell your whole herd. Write us.

California Breeders Sales and Pedigree Company
C. L. Hughes, Sales Mgr,
Sacramento - Cal.

ROSAMAINES HOLSTEINS

King Pontiac Netherland Segis 3rd
CHOICE BREEDING STOCK FOR SALE
A. R. O. Records up to 34 lbs. Butter in 7 Days
ROSAMAINES RANCHO
Stalder Bros. RIVERSIDE, CAL.

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

source of much home grown protein feed for swine in the future. County agricultural agents have seen the successful use of the soy bean on many farms and are pushing the crop. It deserves your serious attention.

The use of soy beans for hogs, as has been described, reduces the amount of tankage or other protein supplement which must be purchased or otherwise secured to furnish the best ration. A small amount of tankage, for instance one-sixth of a pound per pig per day, is desirable even with the beans. However, if some other good supplement, such as skimmilk, oil meal or middlings, is available, the tankage need not be used.

Cattlemen State Their Position

At the recent meeting of the cattlemen of the state at Davis the following resolutions were adopted:

That the organization undertake a census of beef cattle in the state; that a spread of $3.50 a hundred pounds should be recognized as a fair one between the price paid for the feeder and the price asked for the finished steer; that public slaughter houses are not to be recommended in California at this time; that the "middleman" is a necessity to the cattle business, but the "commission man" should be eliminated; that action be taken toward securing the establishment of factories for the canning of beef in some central California point to take care of this live stock that is now being marketed outside of the state.

A resolution calling for the importation of 200,000 Chinese laborers into California to help on the farms was voted down.

A committee was appointed to complete the organization of the new association.

For more effective work the association has divided the state into zones or districts, five of them: Southern California, San Joaquin Valley, Coast counties south of San Francisco, Central California and Sacramento Valley, extreme northern counties.

To Maintain Summer Milk Production

During the hot weather there is a great decline in milk production. Often the dairy cow produces less than half as much milk in August as in May. This decline is generally attributed largely to the flies, but the flies are only one of several causes. The main cause is the heat. Cows suffer from the heat even more than man because they do not perspire. During hot weather the pastures are usually short and the flies are troublesome. As a result the cows do not get enough food and so give less milk.

The milk flow should be maintained by all means, since if the cow once declines in milk production, it is almost impossible to increase the flow later. More reliance should be placed upon silage feeding during mid-summer. If silage is not at hand some green feed should be given. Or, if these are not available, grain should be fed. When it is hot the cows prefer to graze early in the morning and late in the evening. They should be in the pasture at these times and not kept around the barn lots any longer than necessary, according to C. H. Ekles of the University of Missouri college of agriculture.

To Aid Hog Industry

"Helpful Hints to Hog Raisers" is the title of a circular just issued by the agricultural experiment station of the University of California. This publication comes close upon the announcement of an agreement between the United States food administration and the packers of the Pacific Coast states whereby the average price of packing hogs bought at terminal points in California, Washington and Oregon will not be less than one cent under the food administration minimum effective on the Chicago market (such Chicago minimum now being $15.50 per hundred). The prices of market hogs being thus stabilized it is expected that regular producers will bend every effort to increase their stock, while the opportunity to utilize the waste on the farm by raising pigs, and then selling at a satisfactory profit, will interest many who have had little or no experience in raising and marketing hogs.

Protect Lambs from Parasites

Internal parasites, particularly stomach worms, are carrying on an offensive campaign at this time against lamb and wool producers. They will continue their operations without waiting for reinforcements, until the cool fall weather arrives.

Large numbers of ewe lambs that are being kept back for the breeding flock will need attention this summer. It is a much safer and a better policy to prevent lambs from being infested than to try to cure them, says Howard Hackedorn of the University of Missouri college of agriculture. The most practical means of prevention is by the use of fresh clean pastures. If practical, the lambs should be changed to fresh pasture every two or three weeks. If not, then the lambs should be put on a clean pasture at weaning time. The wheat stubble in which grass has been sown is an excellent place; the meadow stubble can also be used. During August the corn field is an excellent place to raise lambs as it is cool, flies are not troublesome, and fields are always free of parasites. Sheep on a large range are not so likely to become infested as those confined on a small area. Clean fresh drinking water and salt should always be kept before the lambs. Stagnant pools and water holes are sources from which the sheep are frequently infested.

HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee.
Careful attention given to mail orders.

Whittier State School
WHITTIER, CALIFORNIA

Holstein Bulls

SIR PIETERTJE ORMSBY CANARY heads the herd. He is by Sir Pietertje Ormeby Mercedes and out of a dam that made 862.88 pounds butter in one year as a three year old, and she in turn out of a 1009.87 pound cow. His three nearest dams average 19,496.7 pounds milk and 877.29 pounds butter in one year. A few of his sons for sale.

The McCloud River Lumber Company
McCloud, California

Buy Your Next Herd Sire at Hollywood

We offer two exceptional values at the present time in young bulls.

No. 1—Born February 15, 1918

Sire—KING KORNDYKE SADIE VALE, the only 40 pound bull that has a 40 pound daughter.

Dam—S. V. H. ALTOANA ORMSBY, a daughter of Sir Veeman Hengerveld. She made 16.70 pounds butter in seven days as a three year old right after being unloaded from the cars from the east and is capable of a much larger record.
This young fellow is a splendid individual, three-quarters white, and is a splendid buy at the PRICE $500.00.

No. 2—Born May 9, 1918

Sire—HOLLYWOOD PIETERTJE KORNDYKE, who is by Hollywood Lilith Palmyra, 11 A. R. O. daughters including a 33.44 pound three year old, and out of Pietertje Korndyke Abbekerk, 712.9 pounds milk and 35.30 pounds butter in seven days, 3235.8 pounds milk and 141.6 pounds butter in 30 days, 9300 pounds milk and 375.0 pounds butter in 90 days. As a senior four year old she made 23,874.2 pounds milk and 984.83 pounds butter in one year, and she is a granddaughter of Pontiac Korndyke.

Dam—PIETERTJE HENGERVELD CREAMELLE, 621.5 pounds milk and 30.24 pounds butter in seven days, 2648.7 pounds milk and 124.18 pounds butter in 30 days, 16,633.8 pounds milk and 691.56 pounds butter in 305 days.
The dam and sire's dam of this calf average:

Milk seven days	667.10
Butter seven days	32.77
Milk 30 days	2,942.20
Butter 30 days	132.89
Milk one year	20,254.00
Butter	838.19

(Average of yearly records includes the 305-day record of his dam and the four year old record of his sire's dam.)

This choice young fellow is about two-thirds black, and his breeding on both sides is unexcelled. We recommend this buy as a sure money maker. He will not be here long at the price, $500.

Hollywood Farm
(The Home of Judge Segis)
F. S. Stimson, Owner **Hollywood, Wash.**

Elliott-Brant Rancho Guernseys

We have an especially fine bunch of young Guernsey bull calves to choose a future herd sire from. Guernsey bulls cross well with all breeds of cattle and they increase the quality and color of the milk as well as the quantity of milk and butter fat. The Guernsey bull has won the battle with the scrub cow.
We have calves from A. R. cows with different sized records up to 750 pounds of butter fat. Our prices are reasonable and are based on breeding and records. Write and tell us your needs and we will tell you how we can fill them.

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Capacity of Silos

PROFESSOR L. W. CHASE, of the Nebraska agricultural experiment station, has been giving a great deal of study to the subject of silo capacity, with the result that he has worked out more dependable tables on silo capacity than have heretofore been used.

Practically all tables heretofore accepted have given capacities which were too high. For example, a 14 by 30-foot silo has commonly been rated at 91 tons. In fact, many people call such a silo a 100-ton one when in reality only about 80 tons are put into it as usually filled.

Commonly accepted tables have given the tonnage which a silo would hold if filled to full capacity with settled silage. In most cases it is not practicable for a man to add more silage to the silo after the material has settled thoroughly. The result is that he thinks the silo, as filled with unsettled silage, contains a tonnage which is not a true measure of the contents unless the silo is refilled after the first silage has thoroughly settled.

Capacities of Silos Based on Depth of Silage Immediately After Filling.

Depth in feet when Filling Stops.	Inside Diameter of Silo in Feet 12	14	16	18	20
30	58.5	79.5	103.8	131.6	
32½	65.5	89.1	116.3	147.6	
35	72.5	99.1	129.3	163.9	202.2
37½	80.0	109.2	142.6	180.8	223.0
40	88.0	119.6	156.2	198.1	224.3
42½	....	130.4	170.1	215.6	265.9
45	.....	140.0	184.2	233.6	288.0
47½	....		198.8	251.9	310.8
50	.....		213.6	270.7	333.8

In figurng out the capacities shown in the accompanying table, Professor Chase assumes that the corn is in average condition, that the silo is filled in the usual way, the silage allowed to settle about 12 hours and the silo then refilled. The depth of silage shown in the table is that at the end of the second filling. This would usually be the full depth of the silo except where the roof prevents filling up to the eaves.

Silage varies considerably in weight but the results of five years' weighing show that the figures in this table can be used for average conditions. It would be possible to put considerably more tonnage in a silo by filling it with very green corn or by filling it slowly, so some judgment must be used in applying any table or method of measuring to arrive at the probable contents.

If silo builders and manufacturers will adopt the above figures and methods in rating the capacity of their silos, stated capacities will be more dependable.—Concrete Builder.

STOCK YARDS MUST HAVE LICENSES

All engaged in the business of conducting stockyards in which live cattle, sheep, swine or goats are received, held, or kept for sale, feeding, watering, or shipment, and all individuals, partnerships, associations and corporations, commonly known as commission men, order buyers, traders, speculators and scalpers engaged in the business of handling or dealing in live cattle, sheep, swine or goats in or in connection with such stockyards are required to secure licenses on or before July 25, 1918. Applications for licenses must be made to the Law Department, License Division, United States Food Administration, Washington, D. C., upon forms prepared for that purpose.

Field Notes from the Live Stock Men

L. A. Denker of Saugus (Boquet Canyon) recently made a sale of 12 of his fine Hampshire brood sows to Fred Wadleigh of Palmdale. Among these were some of Mr. Denker's winners at Sacramento last year. Mr. Denker is fitting a full herd for the Pacific Coast circuit, and also expects to show at the National Swine Show, Cedar Rapids, Iowa. He is getting some extra good show sows from the East.

J. B. Manley, manager of the hog department of the Conejo ranch, has just returned from the East with an exceptionally fine bunch of hogs which are being fitted for the entire Pacific circuit as well as the National Swine Show at Cedar Rapids, Iowa. The quality of these animals is the kind that all the breeders are after. They are the big mellow growthy fellows that make such easy feeders. It is like a hog show every day to view the herd at the Conejo ranch. Mr. Manley was gone several months in making this selection. His son, Harold Manley, had charge of the herd while he was gone.

Frederick M. Johnson of Napa writes that Johnson's Defender, who was featured as a "Breed Leader" in the Cultivator of June 15, has died. Mr. Johnson says: "Had he lived he would have made a strong bid for the grand championship honors at the coming state fair. I am going East in September to try to find a worthy successor to this boar as head of my herd, and plan to take in the National Swine Show at Cedar Rapids while back East. Let me say that I have had very gratifying results from my advertising in the Cultivator.

State Forester Homans has appointed 30 fire wardens in Placer County.

Mountain Bred Jerseys are Rustlers

R. E. Bushnell of San Diego County gives the above scene from one of the pastures in that county. He notes that the Jersey is some rustler and if given a chance in mountain pastures does well. Many of the larger ranges in that section show great numbers of Jerseys with brands on.

Cow Testing in Stanislaus

Stanislaus County has two cow testing association at present, and the advisability of forming a third is now being discussed. Approximately 500 cows have been signed up to date for the second unit of the farm bureau cow testing association. The first unit tests over 1500 cows each month, the Stanislaus association about 800.

The value of the cow testing association can be brought out by a statement of Mr. Bowron, who, through the testing of his cows has reduced his herd from 45 to 27 cows and is getting the same amount of butter fat today that he was a year ago when he was milking approximately twice the number, thus cutting down the size of his herd, requiring about half the labor and saving feed.

During June, 1918, 1513 cows were tested by C. E. Bresee, tester of the Stanislaus County farm bureau. Of this number 50 succeeded in obtaining a position on the honor roll. The best average herd goes to Jack Helm, of Turlock, with 1.35 pounds butter fat per day; second, Orburg Brothers of Turlock 1.31 pounds butter fat per day; and third to T. J. Cook of Turlock, 1.21 pounds butter fat per day. Stone, owned by Orburg Brothers of Turlock, heads the list with an average of 2.08 pounds butter fat per day; second, Mildred, owned by J. H. Minto of Patterson, 2.04 pounds butter fat per day and third, Spot, owned by P. Peterson of Gustine, 2.03 pounds butter fat per day.

Alfalfa Caterpillar Again Busy

The alfalfa caterpillar is again on the job. Like an ally of the kaiser he leaves destruction behind him. Stripping the leaves from the alfalfa plant, the bare stalks stand to mark his path. The worms or caterpillars are about one inch long. They are dark green in color with a white line, sometimes distinct, sometimes faint, on each side. The back is often darker than the remainder of the body. The adult of this worm is the yellow butterfly so commonly seen over alfalfa fields.

Control

Any cultural method which will tend to stimulate the alfalfa and reduce the length of time necessary to produce a cutting of hay will tend to hold this insect in check. Plenty of water and good cultivation are very effective. Care should be exercised to clean the field thoroughly when a cutting of hay is removed. No alfalfa about the ditches, levees and fences should be allowed to remain from one cutting to the next since these form sources of infestation. When a field is infested the alfalfa should be cut at as early a date as possible in order to prevent the worms from stripping off the leaves. However, this cutting should not be done until the alfalfa has reached its blooming period, to some extent at least. If the cutting is done at an earlier date the alfalfa will be so slow in starting that it will give the worms a chance to do a great deal of damage to the weakened plants. The above methods will generally control an outbreak of insects if applied throughout the season. However, it often happens that the larvae become very numerous before their presence is noticed. In such cases more drastic means must be employed. A brush-drag applied to the stubble to crush or roll the larvae in the dust will prove very effective. This method must be applied immediately after the removal of the hay. The brush-drag is made by taking heavy brush and nailing the butt ends to a 2x6 timber and then placing a similar timber on top of the butts and bolting the two timbers together. The brush should be heavily weighted so that it will reach the worms which have gotten into the crowns of the alfalfa.—Fresno Farm Bureau Monthly.

Patriotic Poultry Culture

Written for California Cultivator By Jean A. Koethen

IN THESE days of stress and strain when we are all urged to do our bit, and some are making the supreme sacrifice, it behooves the poultry keeper to consider just where he can apply patriotism to the business of keeping chickens. The commercial poultryman has done his share. He responded nobly last year to appeals for increased production which left him stranded high and dry on the shoals of high feed prices, unaided by a corresponding rise in egg prices. If he is able to be patriotic this year it is because of superior advantages in capital, equipment or salesmanship. Now it is up to the person who just keeps chickens — backlotter, farmer, side-liner, whatever name he goes by, —to put his shoulder to the wheel and do his patriotic best.

Patriotic poultry culture demands three things from the keeper of the smallest flock; the keeping of better poultry, a systematic effort to improve what he has, the enthusiastic support of the poultry industry.

He should keep better poultry because the best is none too good. "The hen that lays is the hen that pays" has been repeated so often that it falls on deaf ears. Does poultry pay? Certainly it does. The right kind always did, always will. The wrong kind never did. It is because most flocks are mixed, containing enough of the right kind to balance in a measure the wrong kind that poultry has paid as well and as long as it has. The war is weeding out efficient from worthless and compelling the elimination of the unfit.

"Better poultry" means better layers, better meat producers, more vigorous birds, chicks that grow more rapidly, hens that are prolific for three or four years. It means stock that has been bred for eggs or meat, as the case may be; in other words, pure bred stock, never mongrels. "Better poultry" implies better methods of housing and caring for stock. It means cleaner houses and yards, ventilation, disinfection, sanitation. It means intelligent feeding. More than all, it means keeping but one breed. Only an expert can do good work with more than one. The men who have made names for themselves as breeders have done it in most cases with one breed. To keep one breed for eggs and another for meat is absurd, for any dual purpose breed answers both requirements perfectly.

Continued on Page 67

72 page catalog mailed upon request

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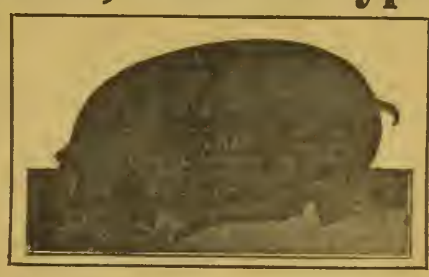

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For Sale—Seed Bed Stock, Orange and Lemon Trees, and Avocado Trees of all standard varieties. Walker-Hubbard Nursery Co., San Fernando, California.

For Sale — Choice, young, thrifty Citrus Trees. W. W. Burns, 631 Security Bldg., Los Angeles.

Citrus Trees — All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park, California.

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20 acres deep silt land, joining good town on the South; 10 a alfalfa, 10 a grain; 800 feet to railroad station. Plenty of water for irrigating. Soft water piped on place. Price right. Chas. McNeely, Alpaugh, California.

For Sale—160 acres at $1,600.00; make fine fruit, nut, bean, hog, dairy or grain ranch; abundance of water; 80 acres level; adjoins reserve; main road; rural mail; bumper crops. Dr. C. W. Dewlaney, Santa Margarita, California.

For Sale—Twenty acres level land, irrigated. School, store and post office one mile. Shasta County, California. Price cheap. Owner, Box 1, Casa Grande, Arizona.

For Sale—Coachella Valley fig and date ranch. Best fruit proposition in Southern California. Bears fruit from May to January and brings top prices. A. L. Wood, Indio, California.

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Wanted—Partner with $2.000.00 in blacksmith shop, garage and hardware store. Work for 3 men in blacksmith shop the year round. Blacksmith or wheelwright. A. Witt, Paige, Tulare Co., California.

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Fall Chicks For Sale—400,000 S. C. White Leghorn chicks from free range Hoganized stock only, for delivery from July to December, at very reasonable prices. Fall chicks are most profitable—broilers in ten weeks, pullets lay at five months. We guarantee safe delivery of all chicks to destination. Shipped safely anywhere West of the Rockies. No money in advance, pay on delivery. Special prices on 500 and 1000 lots. Finest hatchery in the world. Established over twenty years. Further information write Must Hatch Incubator Company, 424 Seventh Street, Petaluma, California.

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Poland-Chinas—Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair 1916 and sire of the 1917 State Fair grand champion or I. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale I. Marsh, Modesto, California.

"Billiken" Chester Whites — The Easy Feeding Mellow Type. All bred sows and bred gilts are gone. Have 15 gilts that were farrowed in May, 1917, that will be bred for September farrows. These gilts are all sired by "Billiken." One young service boar that is just 13 months old. C. B. Cunningham, Mills, California.

Superba, World's Grand Champion Poland-China boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, Cal.

We Pay Cash for Hogs of All Sizes, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170. 3030 E. Vernon Ave., South 2712-J, Los Angeles.

Rancho Rubio Durocs—Thirty of the finest fall gilts we ever raised. Will begin breeding May 10. Write for prices and pedigrees. Some splendid weaned boar pigs for $25.00. Elmer Lamb, Ceres, California.

Mule Foot Hogs, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California, "The Blue Gums."

Duroc-Jerseys—A few spring boars, outstanding individuals, sired by Johnson's Defender and out of State Fair winning sows, for sale. Frederick M. Johnson, Napa.

For Sale — Registered Berkshire pigs sired by Lord Premier's Successor 11th. J. Pringle, at Oak Crest, Cahuenga Pass, R. D. 10, Box 864, Los Angeles. Holly. 14R3.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, Cal.

Poland-Chinas — Will close out a few choice December pigs, both sexes, at $30 cash, crated and f. o. b. Orland. Write to Dr. H. W. Hand, Orland.

For Sale—Pure-bred Poland-China breeding stock, 6 to 12 weeks old. None better in Sacramento Valley. Address Fred A. Clark, Hamilton City, California.

Large Type Poland Chinas are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, California.

Duroc-Jerseys — We breed the champions. Peters, Lamson & Walker, Devore, San Bernardino County, California.

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HEWITT'S BIG TYPE POLAND-CHINA gilts and boar pigs, Hewitt & Hewitt, Dixon, California.

Registered Durocs of the big type—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, California.

Berkshires—A few very fine March farrow pigs, sired by Fair Oaks Champion. Fair Oaks Ranch, Willits, California.

Carruthers' Farm Berkshire Hogs—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, Cal.

Poland-Chinas — A few good breeding boars. S. F. Williams, Orland, Cal.

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W. H. BROWNING, WOODLAND, CAL.

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Lumber-Sash-Doors-Plumbing - Supplies —Building materials of all kinds. New and second hand "A"R.W. shingles 60c per bundle. Send list for estimates. Dan P. (Mission Street) Dolan, 1620-1650 Mission street, San Francisco.

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For Sale — 100 head grade Jersey dairy cows. Tuberculin tested by State Deputy Veterinarian, June 11, 1918. This herd is the result of 23 years' improving and every cow tested for fat. All young and no heifers kept in herd that will not produce 300 pounds fat per year. All are gentle and easy to milk. Average test 5 per cent. Herd in ten months this year and without concentrates produced an average of 375 pounds fat. Will sell in lots to suit or all for $100 per head. A. M. Tomasi, Kellogg, California.

Two Registered Holstein Bull Calves out of A. R. O. cows with high milk and butter records. Ten and seven months old. Fine individuals. Will sell at a bargain to make room. Call or write. California George Junior Republic, Chino, California.

SHORTHORN CATTLE, SHROPSHIRE SHEEP, Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Guilford, Owners.

Pedigreed Bull Calves, Registered $50.00, unregistered $25.00. Service bulls $75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, California.

For Sale—Six registered, pure bred Holstein bull calves. Nice straight individuals ranging in age from two weeks to one year old. Price $50.00 to $125.00. Address Laurel Dairy, R. F. D. No. 1, Box 17, San Luis Obispo, California.

For Sale — Four Holstein-Friesian bulls from 8 to 18 months old. Pedigreed stock. Fine individuals. Will be registered on sale. Geo. C. Roeding Company, Fresno, California.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, California.

Registered Shorthorns, cows with calves at foot, yearling heifers and bulls for sale. Fair Oaks Ranch, Willits, California.

Ayrshires (registered — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

Elkhorn Farm Ayrshires—For sale young bulls of exceptional breeding and individuality. J. Henry Meyer, R. D. 2, Box 82, Watsonville, California.

Sunshine Farm Jerseys — Young bull, ready for light service, for sale. E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

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Oregon, California Government Lands—Booklet free. Tells "How, Why, Where." Write Joseph Clark, Sacramento.

OPEN AIR FARM BUREAU MEETINGS

Stanislaus County farm bureau centers have held several open air meetings. At Tegner and Wood Colony only a few were able to attend because of the rush season so that they just sat in their machines and had a social chat. Although these meetings are not conducted to the scheduled plan many points were brought out which were of considerable value.

At Hickman it was so warm the meeting was held in the school house steps under the spot light. It was so successful that they intend holding the rest of the summer meetings in the open.

Owing to low streams in the mountains hydro-electric power and irrigation water will both show such shortage before the season is over that the state railroad commission contemplates an early conference with the leading companies controlling power and water to determine as to possible rationing which may soon be necessary.

Stanislaus farm bureau schedule for August: Mt. View, 2; Hughson, 5; Jennings, 7; Modesto, 7; Denair, 11; Mitchell, 12; Thalheim, 13; Fairview, 14; Orange Blossom, 17; Wood Colony, 19; Hickman, 21; Ceres, 22; Patterson, 23, Claus, 28.

PATRIOTIC POULTRY CULTURE

Continued from Page 65

This experimental twist of the average mind which makes it impossible for many amateur poultry keepers to hold themselves down to one breed is responsible for a large part of the failure to improve the laying of the dual purpose and meat breeds. A is keeping Barred Rocks. His neighbor, B, tells him how many more eggs Anconas lay than Rocks, and A forthwith buys a couple of settings of Ancona eggs and lets the stock run with the Rocks. His Anconas may lay more eggs than the Rocks for a year or so, but ultimately he has neither Anconas nor Rocks. Two breeds require twice as much room as one, and, in order to accomplish anything worth while, one must hatch as many of each kind as he would of one if he had but one. It is said that 400 chickens must be raised in order to produce one show bird. If this is true, how far will any of us get with more than one breed?

But it is not enough to start with good stock. The best stock, without proper care, careful culling and intelligent breeding, degenerates with wonderful rapidity. This is why the fancier's business is on such a firm foundation. I believe I am putting it mildly when I say three-fourths of the fancy eggs and chicks and breeding stock sold never come to anything. Either the chicks are spoiled in raising or the eggs in hatching, or there is no attempt to keep the stock up to the standard by breeding from the best and only from the best. One need not be a fancier to pick out the best layers or the best cockerel in his flock or to mate the two. He needs only plain common sense and the desire to improve his flock.

This is the day of the booster. If you believe in your work or in the article you produce, boost for it. The public has a notion—how it got it is hard to imagine — that eggs are a luxury. Eggs are the perfect food. They contain protein, fat and iron, the substances most needed by children and invalids. One egg contains sufficient of these ingredients for a meal for any but the most robust, and is cheap at five cents. Where else do you get so much for a nickel? Certainly not in an ice cream cone. You can buy two eggs and a half for the price of a strawberry sundae, and your two eggs and a half would make a sustaining meal by themselves. Restaurant keepers know the value of eggs and charge accordingly. It is only the consumer, who has been accustomed to buying this most nourishing food product for less than it costs, that kicks at a fair price. Talk about eggless cakes and puddings. Why, it is just the eggs that make the cakes and puddings nourishing. Keep talking, egg producers, whether you have few hens or many. Educate the public in the value of eggs.

And while you are educating the public, don't forget to boost the industry of which you are a part, infinitesimal, perhaps, but still a part. Get into the organization, whatever it is, where you belong, and boost for that. Folks say poultry people won't work together. Let's show them better Boost for the best food there is and the people that produce it. That is what I call patriotic poultry culture.

Advertising the Egg

Poultry people are realizing the efficiency of advertising and in a large way are "going after" the consumer. These organizations: Poultry Cooperative Milling Association, Poultry Producers of Southern California, Inc., Poultry Breeders' Association of Southern California, American Poultry Association of California, Leghorn Association of California, Wyandotte Club of California will send greetings and make an address before the National War Emergency Poultry Federation Convention to be held this week in Chicago. In it they will refer to the fact that "it will be of some interest to know that the poultry production of California has a value of $35,000,000 per annum; that fully 70 per cent of California eggs are produced on farms where poultry culture is an exclusive business; that for the most part the breeders are pretty well organized, with cooperative bodies in the northern, central and southern portions of the state; and that in the way of modern methods and appliances they have utilized every means that tends to lessen cost of production, augment quality and enhance salesmanship. Prevailing economic conditions have nevertheless rendered poultry culture a rather hazardous occupation since the advent of the European war. These conditions (as applied to the country as a whole) in their varying phases will be ably discussed by people of authority before this convention, and (let us hope) with helpful results. With us in California, where eggs are practically an exclusive product on many poultry plants, we have found two obstacles in profitable salesmanship, viz., that when eggs attain a price of 50 cents and over per dozen they strike what the trade designates as the "dead line"—that is, they do not move in average quantities: this, combined with the fact that the average consumer being wholly unfamiliar with the nutritive value of eggs, assumes that they are expensive at five or more cents apiece, all the time buying meat products at prices that, food values and waste considered, are really more excessive. Paradoxical as it may seem, egg values in many households are a novelty, hence an intelligent and intensive advertising campaign exploiting nutritive values and intelligent preparation is needed, and the sooner it is put in operation the better for the future of poultry culture in this country. The idea that eggs are a luxury when selling at 50 to 75 cents a dozen, as compared with prevailing prices of other food products, must be exploded. The public must learn to appreciate the economy of the egg in its preparation, its small amount of waste material (about 10 per cent) its assimilative value and finally its sustaining power as a food; of all these things it is surprising how little the purchasing public really knows. Like milk, eggs are a food, easily digested if not damaged in cooking. A raw or soft boiled egg is easily assimilated and can be eaten with impunity by invalids and children. The average freshly laid product of the industrious hen by weight is worth more than as much beefsteak. Indeed, there is no more concentrated, nourishing food than eggs. The albumen, oil and saline matter are, as in milk, in the right proportion for sustaining life. Two or three boiled eggs with a slice or two of toasted bread. make a breakfast fit for the soldier in the trenches and the president in the White House. Then why not advertise and induce the public to eat them more freely?"

Results of advertising and the necessity of making known the food value of eggs and the fact that California breeders believe in advertising is followed by "in conclusion, gentlemen, the California poultry breeders ask that you endorse a country wide advertising campaign, to be executed by the various local organizations, exploiting the food value of the egg and advocating a greater consumption on grounds of economy to the consumer, to the encouragement of red meat conservation for the government, for the maintenance of the poultry industry on a living base, and for the winning of the war. This is California's poultry message to men and women here assembled as representatives of a billion dollar industry. Will they indorse it?"

Valuable Feed From Garbage

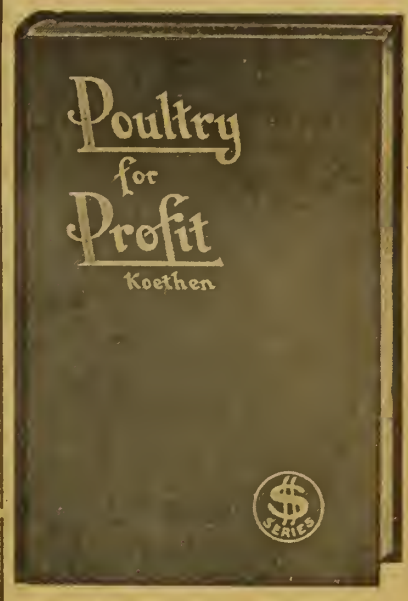
With an increasing understanding of the value of garbage, new methods are rapidly being developed for utilizing its ingredients most fully. One of the products now derived from city garbage is a concentrated poultry feed. The garbage is dried and treated to reduce the bulk and also to enable the product to stand shipment and storage. A typical sample of this feed tested about 17 per cent protein, ten per cent fat and 45 per cent carbohydrate. Although crockery and glass in the garbage does not interfere with its value for feeding poultry, the removal of such substances is essential when garbage tankage is to be fed to hogs.

A flotation process now furnishes means for separating the garbage from glass, crockery, metal and similar material so that the concentrated ingredients in the garbage may be converted into hog feed, dog biscuit and chick feed. The present commercial development and possibilities in this field show clearly its growing importance.

The food administration is endeavoring to convince city and town officials of the waste incurred when garbage is burned, dumped or emptied into large bodies of water. Changing methods of disposal may give farmers in many localities the opportunity to secure fresh town garbage for animal feeding.

Petaluma has not been content with the market situation this season. The egg market now is around 35 cents. Shipments out of the town are running above a half million dozen every week.

Poultry can be made to Pay



THERE are two methods of gaining knowledge, necessary to make poultry a success; experience—which is a long, drawn out, expensive road and the one too commonly used. Another method is by the careful studying of books written by practical poultry people who have made mistakes and successes and are willing to give this information in order that you may take the short road to poultry success.

Poultry for Profit

BY

Jean A. Koethen

Graduate of University of Calif.

Gives more practical knowledge of every branch of the poultry business in a more concise and simple manner than any similar book published. With the knowledge gained by a study of this work experience in the poultry business is not as necessary. Through its guidance obstacles are overcome before it is too late.

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Make your Ranch and Orchard produce the limit while prices are high by the use of High Grade Fertilizer.

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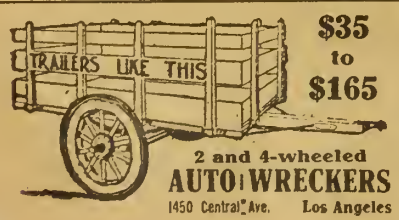

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Household Department

KICKING HORSE RIVER

By Pauline Johnston

It does not care for grandeur,
It does not care for state,
It flips its little fingers
In the very face of fate.
And when its course is thwarted,
Its current set at bay,
It just kicks up its saucy heels
And takes another way.

It laughs among the mountains,
It giggles at the kings,
It dances in the gorges
While a comic song it sings.
It ripples into waterfalls,
It ripples into spray,
And when they raise their eyebrows up,
It takes another way.

It does not care a button
For the granite of the rocks;
It never gets discouraged,
For it's never in a box.
When mountains contradict it
And canyons have their way,
It kicks a little higher
And takes another way.

PRESIDENT'S FOURTH OF JULY ADDRESS

SPEAKING at the tomb of George Washington, at Mount Vernon, on July 4, 1918, President Wilson said:

I am happy to draw apart with you to this quiet place of old counsel in order to speak a little of the meaning of this day of our Nation's independence. The place seems very still and remote. It is as serene and untouched by the hurry of the world as it was in those great days long ago when General Washington was here and held leisurely conference with the men who were to be associated with him in the creation of a nation. From these gentle slopes they looked out upon the world and saw it whole, saw it with the light of the future upon it, saw it with modern eyes that turned away from a past which men of liberated spirits could no longer endure. It is for that reason that we can not feel, even here, in the immediate presence of this sacred tomb, that this is a place of death. It was a place of achievement. A great promise that was meant for all mankind was here given plan and reality. The associations by which we are here surrounded are the inspiring associations of that noble death which is only a glorious consummation. From this green hillside we also ought to be able to see with comprehending eyes the world that lies about us and should conceive anew the purposes that must set men free.

It is significant, significant of their own character and purpose and of the influences they were setting afoot, that Washington and his associates, like the barons at Runnymede, spoke and acted, not for a class, but for a people. It has been left for us to see to it that it shall be understood that they spoke and acted, not for a single people only, but for all mankind. They were thinking, not of themselves and of the material interests which centered in the little groups of landlords and merchants and men of affairs with whom they were accustomed to act, in Virginia and the colonies to the north and south of her, but of a people which wished to be done with classes and special interests and the authority of men whom they had not themselves chosen to rule over them. They entertained no private purpose, desired no peculiar privilege. They were consciously planning that men of every class should be free and America a place to which men out of every nation might resort who wished to share with them the rights and privileges of free men. And we take our cue from them, do we not? We intend what they intended. We here in America believe our participation in this present war to be only the fruitage of what they planted. Our case differs from theirs only in this, that it is our inestimable privilege to concert with men out of every nation what shall make not only the liberties of America secure but the liberties of every other people as well. We are happy in the thought that we are permitted to do what they would have done had they been in our place. There must now be settled once for all what was settled for America in the great age upon whose inspiration we draw today. This is surely a fitting place from which calmly to look out upon our task, that we may fortify our spirits for its accomplishment. And this is the appropriate place from which to avow, alike to the friends who look on and to the friends with whom we have the happiness to be associated in action, the faith and purpose with which we act.

This, then, is our conception of the great struggle in which we are engaged. The plot is written plain upon every scene and every act of the supreme tragedy. On the one hand, stand the peoples of the world—not only the peoples actually engaged, but many others also who suffer under mastery but can not act; peoples of many races and in every part of the world — the people of stricken Russia still, among the rest, though they are for the moment unorganized and helpless. Opposed to them, masters of many armies, stand an isolated, friendless group of governments who speak no common purpose, but only selfish ambitions of their own by which none can profit but themselves, and whose peoples are fuel in their hands; governments which fear their people and yet are for the time their sovereign lords, making every choice for them and disposing of their lives and fortunes as they will, as well as of the lives and fortunes of every people who fall under their power — governments clothed with the strange trappings and the primitive authority of an age that is altogether alien and hostile to our own. The Past and the Present are in deadly grapple and the peoples of the world are being done to death between them.

There can be but one issue. The settlement must be final. There can be no compromise. No halfway decision would be tolerable. No halfway decision is conceivable. These are the ends for which the associated peoples of the world are fighting and which must be conceded them before there can be peace:

1. The destruction of every arbitrary power anywhere that can separately, secretly, and of its single choice disturb the peace of the world; or, if it cannot be presently destroyed, at the least its reduction to virtual impotence.

2. The settlement of every question, whether of territory, of sovereignty, of economic arrangement, or of political relationship, upon the basis of the free acceptance of that settlement by the people immediately concerned, and not upon the basis of the material interest or advantage of any other nation or people which may desire a different settlement for the sake of its own exterior influence or mastery.

3. The consent of all nations to be governed in their conduct toward each other by the same principles of

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8426—Ladies' Waist. Cut in sizes 36, 38, 40 42 inches bust measure. The waist has graduated frills at the front.

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8837—Children's Coat. Cut in sizes 2, 4, 6, 8, 10 years. The lower section of the coat is gathered to the yoke at front and back.

8844—Stout Ladies' Five Piece Skirt. Cut in sizes 32, 34, 36, 38, 40 and 42 inches waist measure. A narrow belt of self material is worn with this skirt.

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PATTERN DEPARTMENT

California Cultivator
Los Angeles

honor and of respect for the common law of civilized society that govern the individual citizens of all modern states in their relations with one another; to the end that all promises and covenants may be sacredly observed, no private plots or conspiracies hatched, no selfish injuries wrought with impunity, and a mutual trust established upon the handsome foundation of a mutual respect for right.

4. The establishment of an organization of peace which shall make it certain that the combined power of free nations will check every invasion of right and serve to make peace and justice the more secure by affording a definite tribunal of opinion to which all must submit and by which every international readjustment that can not be amicably agreed upon by the peoples directly concerned shall be sanctioned.

These great objects can be put into a single sentence. What we seek is the reign of law, based upon the consent of the governed and sustained by the organized opinion of mankind.

These great ends cannot be achieved by debating and seeking to reconcile and accommodate what statesmen may wish, with their projects for balances of power and of national opportunity. They can be realized only by the determination of what the thinking peoples of the world desire, with their longing hope for justice and for social freedom and opportunity.

I can fancy that the air of this place carries the accents of such principles with a peculiar kindness. Here were started forces which the great nation against which they were primarily directed at first regarded as a revolt against its rightful authority but which it has long since seen to have been a step in the liberation of its own people as well as of the people of the United States; and I stand here now to speak — speak proudly and with confident hope—of the spread of this revolt, this liberation, to the great age of the world itself! The blinded rulers of Prussia have roused forces they knew little of—forces which, once roused, can never be crushed to earth again; for they have at their heart an inspiration and a purpose which are deathless and of the very stuff of triumph!

They Are Selling Bones for Food in England

Over in England at the height of the meat shortage and before the populace was put on rations, they sold bones at the rate of five pounds for one shilling. Policemen regulated long lines of people patiently standing out on the sidewalks, waiting, not for their favorite matinee idol to pass, but for a chance to enter a food shop and buy a small quantity of food. It takes about three minutes for the shop keepers to dress their windows over there, merely because there are, perhaps, but a few cans of condensed milk and a box or two of corned beef to be displayed.

Yet over here in America, bones, fats and precious scraps of meat are going into the garbage pails! Although in many cities there were long lines of people waiting last winter for supplies of coal, there has as yet been no pinched-faced mob pleading for food. True, there are frequently long lines of people on the street, but mostly they are buying tickets to shows! In the busy streets in towns and cities shop keepers display elaborate arrangements of all kinds of delicacies in their show case windows.

The accompanying pictures are from the Official Press Bureau in London. They were sent over to this country for the express purpose of showing what England was actually facing. A country in such straits not only needs help herself, but cannot possibly be expected to contribute to the support of United States troops now on the other side. The food shortage is real. Save food and "Carry On."

And You are only asked to save and not waste Food

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Easy to operate. A touch of a match and in a jiffy your stove is ready for cooking.

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More convenient than coal or wood. Better and more economical cooking all the year round. A cool kitchen in summer.

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Send in $1.00 for book or $1.75 for book and California Cultivator.

Cultivator Publishing Co., 115 N. Bdwy., Los Angeles

Los Angeles Market

Los Angeles, July 17, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.
California extra creamery 49

Dairy Exchange price past week on extras.

July	10	11	12	13	15	16
'18 ...	48	49	49	..	49	49

Rcts. wk. ending July 16, 302,400 lbs.

CHEESE

Brokers prices:
California fresh, lb. 26
Eastern Daisies 29
Domestic Swiss 40
Oregon triplets 27

EGGS

Exchange quotations. Prices to retailers 2 to 3 cents higher.
Fresh extras 45
Case Count 43
Pullets 42

Dairy Exchange prices past week on fresh extras.

July	10	11	12	13	15	16
'18 ...	46	46	45	..	45	45

Rcts. wk. ending July 16, 1,599 cases.

POULTRY

We quote to producers.
Broilers .....23@30
Fryers 30
Hens, small, 19; heavy 25
Ducks, lb. .....18@24
Roasters 30
Roosters, old 15
Turkeys .....25@35
Geese, young, lb. 22
Rabbits, live, 17@18; dr. 40

LIVESTOCK

We quote cwt f. o. b. L. A.
Corrected Wednesday morning July 17, by the Cudahy Company.
Cattle—
Beef steers, av. 1000-1100 lbs—11.50@12.00
Heifers, good .....8.50@9.00
Cows, good .....8.00@8.50
Canners .....5.00@5.50
Hogs—
Av. 125 lbs. 15.50
Av. 150 lbs. 16.00
Av. 175-225 lbs. 16.50
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers .....11.00@11.50
Ewes .....10.50@11.50
Lambs .....14.50@15.00
Yearlings .....11.00@11.50

POTATOES

Wholesale selling prices:
Northern 2.00
Idaho Russets 1.80
New, lug .....65@70
Sweet, lb. 7

ONIONS

Wholesale selling price, cwt.:
Bermudas, cr. 1.15
Brown, cwt. 2.75
Crystal Wax, 50-lb cr. 1.50
Garlic 12
White, lug .....1.10@1.15

VEGETABLES

Wholesale prices:
Artichokes, doz. .....60@85
Jerusalem. lb. 7½
Asparagus, lb. .....11@12
Beans—Wax, lb. .....5@6
Ky. Wonder .....6½@7
Limas, lb. 12
Beets, sk. 1.50
Cabbage, lb., 2¾@3; sk. 2.00
Carrots, doz. 30
Corn, sugar, lug. 1.00
Cucumbers, lug .....75@85
Egg Plant, doz. 60
Horseradish, lb. 15
Lettuce, doz. .....30@35
Leeks 35
Okra, lug 1.75
Mint, doz. 40
Onions, green, doz. .....25@30
Peas, Tel., lb .....11@12
Peppers, Chili, lb., 12; Bell .....12@13
Parsnips, doz. 40
Parsley, doz. 20
Radish, doz. 30
Rhubarb, C. W. bx, 1.15; Strawberry .1.30
Squash — Summer, lug 1.00
Tomatoes, cr. 1.40
Turnips, doz. 50
Watercress, doz. .....35@40

FRUITS

Wholesale prices:
Apples, new, bx. .....1.50@1.75
Apricots, lug. .....1.00@1.25
Bananas, lb. .....7@7½
Cantaloupes — Ponies, cr. 3.25
Standards 3.50
Cherries, Black, lb. .....12@15
Currants, cr. 1.85
Figs, bx. 1.00
Gooseberries. lb. 12
Grape, Malagas, lb. .....11@12
Peaches, lb. 7
Plums, lug .....2.25@2.50
Strawberries, tray 1.10
Watermelons, lb. .....2¾@3

CITRUS

Lemons, packed, 7.25; loose 5.50
Juice 3.50
Oranges — Valencias 6.75
Grapefruit .....2.50@2.75

BEANS

These are prices made by wholesaler to retaller.
Lady Washington 13.00
Limas 13.50
Pinks 8.00
Manchurian Reds 8.50
Baby Mex. 9.00
Garbanzos .....9.25@9.50
Small Whites 13.00
Blackeyes 8.50
Teparies .....8.50@9.50
Lentils 24.50
Mex. Red. 8.75

HONEY

Cost to producer on farm:
White extracted .....20@21
Light amber extracted .....16@18
Alfalfa amber extracted .....15@16
White comb, per case .....4.50@6.00
Beeswax, lb. 34

HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A.:
Tame Oat .....26.00@28.00
Volunteer Oat .....14.00@16.00
Wheat .....23.00@26.00
Barley .....23.00@26.00
Alfalfa .....19.00@22.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

Alfalfa hay $25.50 car lots f. o. b. L. A.; $23.00 f. o. b. common shipping points, taking $2.50 carload rate to destination.

GRAIN AND FEEDSTUFFS

Prices on Local Grain Exchange:

	Bid	Asked
No. 1 bright feed barley	$2.60	$2.65
Milo maize, local	.....	3.50
Oat middlings	.....	36.00

San Francisco Markets

San Francisco, July 16, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:
Extras 51
Prime firsts 49
Firsts 47

Prices Extras past week and year ago.

July	9	10	11	12	13	15
'18 ...	49	49½	50	50	50½	51
'17 ...	36½	37	37	38½	37	..

Rcts. wk. ending July 15, 385,700 lbs.

CHEESE

Dairy Exchange quotations:
Cal. Flats .....24½@26
Cal. Y. Am. .....24½@25
Ore. Y. Am. 26
Jack Cheese, full cream 26

EGGS

Dairy Exchange Quotations:
Extras 47½
Selected Pullets 44

Prices Extra past wk. and yr. ago:

July	9	10	11	12	13	15
'18 ...	48½	49½	48	47	47	47½
'17 ...	33½	34	34½	34½	34½	..

Rcts. wk. ending July 15, 12,317 cases.

POULTRY

We quote to producers. lb.:
Per lb.: Large hens, 29@31; small do, 23@25; medium, 26@27; broilers and fryers, ¾ to 1½ lbs., 37@38; 1½ lbs. to 3 lbs., 35@37; young colored stock, over 3 lbs., 38; old roosters, 19@20; ducks, lb., 22@28.
Squabs, doz. .....2.50@4.00
Belgian Hares, live, lb. .....15@18

LIVESTOCK

Prices gross weight:
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.
Steers, lb., 10@12; thin, 8@9; cows and heifers, 7@8½; thin, 4@5½; calves, 7@10¾.
Sheep—Per lb. gross weight: Unshorn wethers, 11@11½; ewes, 9¼@10; lambs, yearlings, 11½@12; milk, 14@14½. sheep, 1¾@2.
Hogs—Hard grain-fed, weighing 100 to 140 lbs., 15½; 140 to 300 lbs., 16; 300 to 400 lbs., 15½.

POTATOES

Wholesale selling prices at wharf, cwt.:
River, new, cwt. .....2.00@2.25
Garnets 2.00
Sweets, lb. .....6@7

ONIONS

Wholesale selling price on wharf, cwt.:
Garlic, lb. .....3@4
New Red, sk. .....1.40@1.60
Clarksburg, sk. .....1.75@2.00

VEGETABLES

Wholesale selling price:
Artichokes, cr. .....2.50@4.00
Asparagus, lb. .....4@7
Beets, sk. .....75@1 00
Beans, String, lb. .....7@8
Limas, lb. .....5@7
Garden .....9@11
Beets, new, sk. .....1.50@1.65
Cauliflower, doz. .....40@60
Cabbage, lb. .....1½@1¾
Carrots, sk. .....90@1.00
Celery, cr. .....1.50@2.00
Corn, green, sk. .....2.50@4.00
Cucumbers, bx. .....75@1.00
Egg Plant, lb. .....5@6
Lettuce, doz. .....15@20
Parsnips, sk. .....85@1.00
Okra, bx. .....75@1.00
Onions, green, bx. .....65@75
Peas, lb. .....8@11
Peppers, Bell, lb., 2@3; Chili .....5@6
Rhubarb, bx. .....1.00@1.25
Squash, Summer, lug .....1.00@1.25
Italian, lug .....50@1.00
Spinach, cr. .....50@75
Tomatoes, bx. .....50@75
Turnips, new, sk. .....65@75

FRESH FRUITS

Apples, White Astrachan, bx .....1.75@2.25
Red, bx. .....1.25@2.00
Apricots, lug. .....1.00@1.25
Bananas, lb. .....7@7½
Berries—Pr. ch.: Strawberries, ch. 7.00@11.00; blackberries, 8.00@12.00; loganberries, 6.00@8.00; raspberries, 7.00@9.00; gooseberries, lb., 6; English, 10@15.
Cantaloupes — Ponies .....2.50@3.00
Standard, 2.50@3.50; Flats .....1.00@1.25
Honey Dew .....2.50@3.00
Cherries—Drawer, 1.50@1.75; loose, lb., Ore. Bing, 15@17½.
Currants, dr. .....60@75
Figs., bx.: Mission, double layer .1.25@2.00
Grapes, cr. .....1.25@2.25
Huckleberries, lb. .....15@18
Peaches, bx. .....75@1.00
Strawberry .....1.00@1.25
Pears, green sugar, cr. 75
Plums, bx. .....1.25@1.50
Santa Rosa .....1.75@2.00
Pineapples, doz. .....4.50@5.00
Watermelons, lb. .....2@2½

CITRUS

Lemons, bx., according to size, 6.00@8.00; lemonettes, 6.00@7.00; grapefruit, fy., 2.50@3.50; oranges, 5.50@6.50.

BEANS

Jobbers' prices, cwt., recleaned:
Limas .....11.90@12.00
Bayous .....8.00@8.25
Small Whites .....Nominal
Large Whites .....Nominal
Mexican Reds .....8.00@8.25
Blackeyes .....7.25@7.50
Pinks .....6.90@7.00
Red Kidney .....11.75@12.00
Cranberry .....Nominal
Teparies .....8.50@8.75

DRIED FRUITS

(See Los Angeles markets.)

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....15@18
Amber extracted .....12@14
White Comb, cs. 4.50
Light amber comb, cs. .....3.50@4.00
Beeswax .....36@40

HAY

Under date of July 13, Scott, Magner & Miller says:

Hay receipts past week, 2139 tons, about 50 per cent more than we received either last week or the week before with the natural result that prices are somewhat easier and if these receipts continue at about this rate or heavier we may look for lower figures to prevail as consumers have thoroughly made up their minds in most all instances to only buy from hand to mouth while these high prices prevail. Alfalfa remains about the same although arrivals have been heavier than for some time past and possibly there may be some decline in prices on this commodity should the receipts continue.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market — for prices to consumers charges of cartage, commission and handling must be added according to conditions:

Fancy Wheat Hay (light 5 wire bale) .....26.00@27.00
No. 1 Wheat or Wheat and Oat Hay .....22.00@24.00
No. 2 Wheat or Wheat and Oat Hay .....19.00@21.00
Choice Tame Oat Hay .....24.00@26.00
Other Tame Oat Hay .....21.00@23.00
Wild Oat Hay .....17.00@20.00
Barley Hay .....18.00@21.00
Alfalfa, first cutting .....16.00@20.00
Alfalfa, second cutting .....22.00@24.00
Stock Hay .....15.00@17.00
No. 1 Barley Straw, bale .....50@80

GRAIN

Wheat—Government prices: Common white hard, base price, $3.50 per cental, or $2.10 per bushel of 60 pounds delivered in terminal warehouses in bulk; soft white, base prices, two cents per bushel less, or $2.08 per bushel; white club (Including Sonora), $2.00 per bushel. If wheat, after cleaning, weighs 60 pounds or more to bushel, base price stands; if 58 to 60 pounds to bushel, three cents per bushel reduction; if 56 to 57 pounds six cents per bushel less; if less than 56 pounds, grain becomes sample grain and sells on its merits up to within one cent per bushel of 56-pound wheat. Additional charge made for sacks.

SEEDS

Prices in round lots, lb.:
Millet, recleaned .....5@5½
Alfalfa, lb. .....20@21
Flax .....7@7½
Hemp .....5@5½
Rape .....2½@3

Citrus Fruit Market

Los Angeles, July 17, 1918.

Orange prices indicate streaked market condition or, perhaps, more of a streaked lot of fruit. The auctions show some sales close down to a dollar, others around eight dollars. In general a strong tone prevails.

A dispatch from New York dated July 15 says, "200,000 boxes of lemons afloat, but no sale scheduled as yet."

Shipments

Shipments of citrus fruits to date since November 1, 1917: Southern California; oranges 11,920 cars, lemons 4195. total 16,115. To same date last season oranges 32,840, lemons 6247, total 39,087. Central California this season; oranges 2536, lemons 115, total 2650. Last season to same date; oranges 4655, lemons 164, total 4819. Northern California; oranges 203, last year same date, 845.

AT THE AUCTIONS

July 10

New York: 8 cars Valencias, 3 lem. Val. 3.05-7.90, lem. 5.00-6.00, grapefruit halves, 1.40-3.60.

Philadelphia: 6 val., 2 lem. Val. 2.80-7.25, lem. 4.55-6.05.

St. Louis: 4 lem. Lem. 4.65-7.00.

Boston: Val. 5.20-6.50, lem. 5.15-6.10.

July 11

New York: 9 oranges, 4 lem. Val. 4.55-7.40, lem. 3.70-5.75.

Boston: Val. 3.10-7.40, lem. 1.45-6.30.

July 12

New York: 9 oranges, 3 lem. Val. 4.10-8.05, lem. 5.65-7.00, St. Mikes 6.50-7.00, Med. Sweets 3.90.

St. Louis: 2 oranges, 3 lem. Val. 3.25-6.85.

Cincinnati: 1 orange, 4 lem. Val. 6.40-6.75, lem. 2.25-6.10.

Boston: No oranges sold. Lem. 5.60-6.85.

July 15.

New York: Val. 4.10-8.05, lem. 1.90-6.50.

July 16

New York: 9 oranges, 6 lem. Val. 5.30-7.75, lem. 4.25-6.20.

Philadelphia: Val. 6.55-7.30, lem. 4.30-5.55.

Boston: Val. 5.80-6.20, lem. 3.40-5.95.

MARKET NOTES

Potatoes and onions are both showing stronger market conditions in San Francisco.

California shipped during last week 180 cars of yellow onions. Price ranged around $1.25-$1.50 f. o. b. Stockton, and sold in Chicago at $1.75 to $1.90.

Carlot Southern California potatoes are selling around $1.75 with extra fancy stock going to $1.85 f. o. b.

The state department of agriculture for Washington estimates 7250 cars of apples in the Yakima section and 6200 cars in the Wenatchee district. The Spokane district will have a material increase over last year and estimates its output at around 1000 cars. June drop of apples was very heavy.

Egg receipts in San Francisco last week were larger by a thousand cases than usual at this period of the year.

In making preparation for the shipping season the Wenatchee apple growers have provided for solid apple trains which go out on regular schedule, arriving in Chicago on the eighth day.

Turlock's first car of cantaloupes was sent out Thursday the 11th.

Imperial Valley has closed its cantaloupe season with a total of about 4500 cars.

Hanford is delivering its first dried apricots.

The announcement of the food administration that the price of raisins would be five and a half cents was feared to make a flat price, but later information indicates that this is a base price for Muscats and sweat box only; Thompson Seedless will be on a different basis.

DRIED FRUIT PRICES

The government approved prices on raisins have been officially announced about one cent per pound higher than last year. Dried peaches have been announced at about three cents per pound advance over last year's prices. Growers will receive about 11 cents; the government takes 12,000 tons, just half of the dried peach output, leaving only that many tons to supply a demand in ordinary times calling for 30,000 to 40,000 tons. F. o. b. prices for apricots fixed at 13 cents for choice, 16 cents for fancy. Prune prices set, and the government takes all the three medium sizes, 50s to 80s, inclusive, at 8¾ and 9 cents.

Santa Rosa cannery reports the putting up of 115,000 cans of fruit daily.

The bureau of markets report of peach crop gives California 70 per cent condition as against 90 per cent condition in 1917, and with a total output this year 10,866,000 bushels, as against 14,151,000 last year. Conditions United States over indicate 54.3 condition. Georgia shipped 3300 cars of peaches up to July 1.

Southern California shipments during the first part of July were heavy. While the movement up to the 1st of the month was much lighter than last year, recent shipments have brought the volume up. Some of the principal districts have now finished shipping and others are cleaning up rapidly. A big falling off is expected the third week in July and few will be left to move afterward. Ninety per cent of the carlot shipments have gone out iced, as compared with 40 per cent last year.

Inspection of Central California fields in the delta district showed that plants were making an excellent start in the field. Transplanting will be practically finished by August 1; growers having made better progress than usual, with fully half of the acreage already set, in spite of labor difficulties. The area for the year 1918-1919 is estimated as follows: Sacramento County, 805 acres; Contra Costa County, 1100 acres, and San Joaquin County, 165 acres; a total for the delta district of 2070 acres. This represents a very material reduction from last season's planting. A special reporter at Watsonville, where 75 acres were grown last year, states that the crop is normal; seedbeds are good; the supply of plants ample, and the general outlook is favorable.

PARTIAL LIST CALIFORNIA FRUIT AND VEGETABLE SHIPMENTS

From post card reports to the Los Angeles branch of the bureau of markets, United States department of agriculture, report is made of the following shipment of cars of products from California for the week ending July 15: Apples, 5; apricots, 75; blackberries, 5; cabbage, 7; cantaloupes, 3; carrots, 5; cauliflower, 1; cherries, 4; cucumbers, 1; dried apricots, 5; dried beans, 10; dried peaches, 1; dried peas, 2; dried potatoes, 1; dried prunes, 3; garlic, 1; grapefruit, 3; grapes, 13; lettuce, 2; loganberries, 20; mixed fruit, 24; mixed vegetables, 41; mixed fruit and vegetables, 11; onions, 88; peaches, 8; pears, 100; peas, 1; plums, 416; potatoes, 611; raisins, 57; strawberries, 2; tomatoes, 19; watermelons, 32; Arizona cantaloupes, 178; Arizona watermelons, 6; Mexican cantaloupes, 2; Mexican watermelons, 2.

OF COURSE

"Come on," said the first flea as he hopped from the brown bear's left foreleg, "come over and join me in a short game of golf."

"Golf!" exclaimed the second flea, hastily taking a bite of hyena, "Where in the realm of Barnum are we going to play golf?"

"Why," said the first flea, "over on the lynx, of course."—Boy's Life.

IS THE AUTO NECESSARY?

Continued from Page 3

baker. A great many farmers have trailer attachments to their machines in the Carpenteria Valley. The following is a list of farmers who use their so-called "pleasure cars" for carrying on the work of the farm: L. B. Cadwel, Carpenteria; Ed Baillard, Bern Franklin, Ed Ellery, Adrian Wood, H. C. Henderson, John Roderigues, Fred Lambert, Frank Lambert, Henry Fish Seed Co., L. M. Higgins, Ben Bailard, H. P. Drake, C. Lillington, J. Rook, all of Carpenteria; and J. G. Williams, Arthur Pallin, Tom Emmons, Elmer Kellogg, John More Jr. and Thos. Miller, all of Goleta.

This is but a few of the farmers near town. Nearly all other farmers further removed from here have machines and these machines are a necessity in their business and many of them must go considerable distance for supplies. Time is saved in getting machinery repaired as well as getting men to work.

C. S. Myshka, Farm Adviser, Mendocino County

A survey of the farmers in Mendocino County using their autos for farm business has just been received.

As an estimate I would say that not less than 90 per cent of the farmers use their cars in active farm work or in expediting farm business through making hurried trips for repairs, trading, etc.

J. F. Grass Jr., Farm Adviser, Merced County

I know of very few instances where the auto (the so-called pleasure auto) is not used in a business way around the farm. They are used anywhere for the hauling of materials for the farm, carrying products to the market, to transporting the manager or men from one branch to another. Many have trailers attached or adjustable parts to make small trucks out of their machines.

If you desire a few specific instances, I will say that the Robinson Bros. of Merced use their autos in going over the ranges looking after their cattle. H. C. Doyle of Merced used his machines in transporting material to the farm. Fay Batten of Dos Palos uses his machine for getting supplies to his ranch and delivering products to town. C. A. Rose of Winton uses his machine for transporting of products around the farm and from town to the farm. The Rodgers Bros. of Merced use their machine in cutting wood.

J. R. Hodges, Farm Adviser Los Angeles County, Covina

I am of the opinion that about four-fifths of the automobiles used by fruit growers are in connection with work on the farm or ranch going to and from, etc.

R. A. Welch, fruit grower, ranch three miles from town, goes up almost every day, sometimes twice.

S. Douglas has ranches outside of town and hauls men to work sometimes twice daily.

John Chasman has ranch and pumping plant outside of town, goes almost daily. Grant Chapman same as above. J. D. Webb, same as above. H. W. Bailey, same as above. J. Holly, same as above, and many others.

D. Camholtz, trailer attachment. J. Overholtzer, same. J. Raymond, same, and many others.

A good many use made-over cars for delivery, among them Frank Ohaver, S. A. Stowell and H. O. Fumigating Co.

A few old cars are being made over into tractors with more or less success, some doing farm work with them altogether.

G. H. Flournoy, Horticultural Commissioner Tehama County

Most of the farmers with whom I am acquainted in this county are using their automobiles in their farm work.

Names of farmers using automobiles: Arthur Mitchell, Arthur Wilcox, Olney Bert, Paskenta; Fred Hulse, C. E. Flournoy, J. J. Heavy, James Heavy, Flournoy; H. W. Samson, T. F. Flournoy, E. C. Schultz, O. W. Houghton, R. L. Houghton, Corning.

Names of orchardists using automobiles: Henry Allison, W. E. Glick, C. S. Jewitt, S. Summer, Corning; Fred Weeks and W. E. Johnson, Red Bluff.

A. L. Rutherford, Horticultural Commissioner Stanislaus County

I am not exactly clear as to meaning of "a pleasure car" as for your example it seems to suit the case of every farmer who has a Ford or like cheap car. For instance, my son has a Ford and is living on my farm and has no other conveyance. All his running about on the farm is done in this car. His wife takes her butter and eggs to town and gets their supplies in the car. So the car is used just the same as he would horse and buggy which he would have to have if he did not have the car.

I have a neighbor who has an Overland, which he drives only when on special trips and he keeps a horse and buggy for his business trips.

In the first case I would call it a business car, while in the latter I would call it a pleasure car, although in the first case the car is used Sundays for outing trips.

Another neighbor has two cars, one strictly business car and the other for pleasure.

Another has a Dodge coupe, which is quite stylish for a business car, but it is used as such. He being a grape buyer as well as a grower, used this stylish car for all his running about.

The fact is that 90 per cent of all farmers who have only one car, use it for business. The horse and buggy being slow 95 per cent of all farmers who have more than one car have one for a pleasure car.

The automobile has become a necessity on the farm, and the farmer who does not possess one is either behind the times or is too poor to own one.

ONE TRACK FOR WAGONS

The most radical action to be taken in connection with the standardization and elimination campaign in the farm wagon business will be the adoption of a standard track, thus doing away with so-called wide and narrow tracks and solving a problem that has vexed the wagon trade for many years.

This decision was reached at a meeting of the farm wagon department of the National Implement and Vehicle Association held in Louisville, Kentucky.

The above announcement is from the Tractor and Truck Review which gives the particulars of one of the largest meetings ever held by the manufacturers of wagons. This is a common sense movement which should have been taken up years ago.

Wagons have been made in a variety of tracks, the two principal ones being a wide track, or 60 inches, used largely in the Eastern and Southern territory and on the Pacific Coast; narrow track, or 54 inches, used in the Middle West, North and in Canada, as well as portions of the Middle East.

It was unanimously decided to adopt a standard of 56 inches, which is the standard track of pleasure automobiles and many other motor vehicles, so that after wagons are constructed of this track the farmer moving to any section of the country will be able to use his wagon without making any changes.

The next important change was the adoption of a standard box width of 38 inches, outside measure. Heretofore not only had this width been made, but many others, principally a 42 inch width on wide track wagons. There was some controversy over the loading of cotton bales in the new width, but the Southern manufacturers courageously agreed to adopt the new standard width. It is understood that the government is requiring the baling of cotton in smaller dimensions in order to economize in railroad car space.

The third important change was the adoption of three standard heights of wheels, namely, the 40 inch, 44 inch and 48 inch, which are to be used in combinations, enabling the use of but one standard gear. A restricted list of tire widths was also adopted, graduated by inches from two to four inclusive. There were several minor changes in construction made, but the foregoing are those affecting the trade throughout the country.

WEATHER CONDITIONS

San Francisco, Cal., July 13, 1918.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	.02	.02	.09	86	48
Red Bluff	.00	.00	.00	102	64
Sacramento	.00	.00	.00	100	52
San Francisco	.00	.00	.00	72	50
San Jose	.00	.00	.00	84	46
Fresno	.00	.00	.00	102	60
San Luis Obispo	.00	.00	.01	84	48
Los Angeles	.00	.08	.00	84	60
San Diego	.00	.00	.00	74	60

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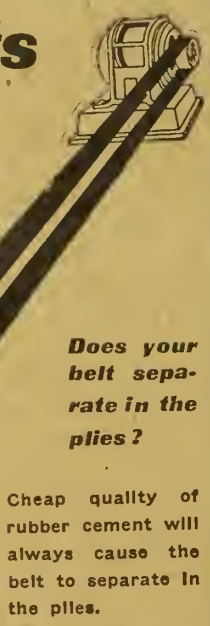

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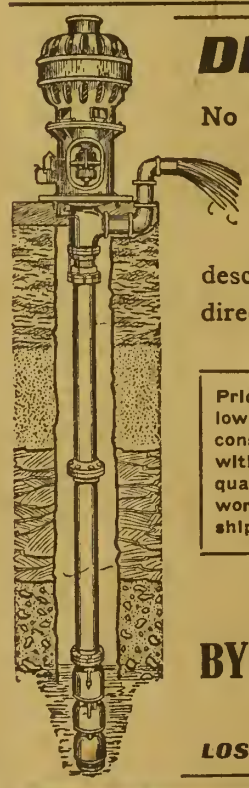

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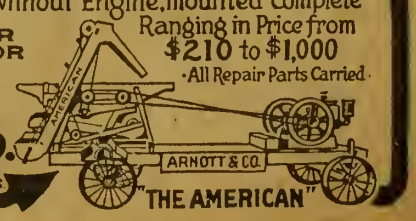

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Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — July 27, 1918 — No. 4

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Saturday, July 27, 1918

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THIS WEEK'S COVER

The tractor is entitled to much credit for America's increase in food production, and as labor gets shorter the demands made upon the tractor must increase, nor is its use manifested only in the depth of plowing and large loads which it will negotiate, but another and more common use is shown on the cover of this issue of the California Cultivator. As soon as the separator has finished its work the tractor takes it and the flock of wagons loaded with supplies and quickly goes to the next job.

WHEAT 1919

The United States department of agriculture is appealing for a 45,000,000 acre planting of winter wheat for the 1919 crop. This will be an increase of seven per cent over last year's sowing. This would give, it is estimated, 636,000,000 bushels, the average yield being around 15.7 bushels per acre. Doubtless an increase in spring wheat will be urged and in excess of a billion bushels secured if weather conditions permit.

The American farmer has made good during the past two years. The new demand will be met if possible for the needs of war ridden Europe for another year will be even greater than in the past.

LIQUID GAS

At the recent Covina demonstration, or school, of fumigation it was plainly shown that with all the improvements which have been given to the orchardist in the matter of insect control, none is more important that the use of liquid hydrocyanic gas. More than a quarter of a century ago the method of fumigation was developed in this state and made a great factor in California's prosperity, but the methods have been faulty, as has been appreciated by every expert who has had to do with them.

A great step in advance was taken when the fumigation machine was brought into use and gas was manufactured so as to be not only more deadly to the scale but of lessened expense and less injurious to tents and appliances used.

Now comes the liquid gas which has to be injected into the atmosphere under the tent, and instant results are secured with no injury whatever to tents or other appliances from the corroding acid. Machinery for its use is simpler, less expensive and equally as effective. It will require some time for manufacturing appliances for using this new method of fumigation, but we believe the time will come when the old method will entirely pass.

POTASH

The benefits to this country from the war will not only be because of securing liberty for us and for the rest of the world, but will, in some respects at least, be material. Prior to the war practically all supplies of potash were secured from Germany for fertilizing and for manufacture of explosives. It was at one time feared a serious shortage existed, but not waiting for German production to supply us, this country got busy, and from seaweeds and the deposits of the desert has secured sufficient that there is no serious loss.

It will require several years of time and the investment of millions of dollars before potash sufficient for America's present agricultural needs can be provided at prices as low as the Stassfurt product can be laid down in Amreica.

For the immediate future the outlook is for diminishing crops from the potash-needing soils of the Atlantic coastal plain and consequent scarcity of and high prices for potatoes, cotton, tobacco, oranges, grapefruit, and garden truck, not only in the East but also to a lesser degree, in the rest of the country as well.

There is, however, ground for the belief that eventually we shall be independent of the German potash monopoly and able to meet any sort of competition from that source.

GREEN MANURE CROPS

The food administration has ruled: "No more bean straw, alfalfa hay, or other valuable stock feed is to be used in mulching or manuring of orchards." That is, of course, pending relief from feed shortage. This will raise a serious problem for many an orchardist because of the fact that stable manure is almost impossible to secure. Fertility in the form of chemicals is valuable if the soil is in right physical condition, but "With all your getting, get humus" has become practically a proverb in soil handling. If the grower is prevented from using hay or straw or manure, and other materials are not available, then he must proceed to make his humus out of the soil. It is a slow process, but with patience and intelligent planting of green manure crops soil conditions may be very greatly improved.

It is yet a bit early for the planting of the winter green manure crop. With abundance of water one might fit the ground and grow a summer crop of buckwheat, which requires only some five or six weeks to bring to maturity, and this could be out of the way for the fall planting of a leguminous crop. Meantime let's consider the best crop for the fall planting. It should be put in by September or at latest by early October. The Cultivator hopes that in an issue in August it may give special attention to cover crops, green manure crops, best time and methods of planting.

Have our subscribers hints of value? Send them in.

JUNE DROP

The serious loss to all citrus growers because of the hot wave of June, 1917, which caused some 60 or 70 per cent of the citrus crop to drop to the ground, induced serious consideration of steps which might be taken to lessen such a disaster another year. The specialists tell us that "June drop" may be because of fungous trouble, weather conditions, thrips, poor physical condition of the tree, and in fact, numberless other things or conditions. It was suggested that at least a step toward immunity from weather conditions might be secured by the planting of an early summer cover crop. Several orchardists have made careful tests, but, as often occurs, this proved "the exceptional year," and another factor had to be considered. This was alternaria citri.

This is by no means the first year that it has had to be considered, however, for the million dollar yearly loss which it has caused to California citrus growers called for an investigation, and the results of this investigation are embodied in Bulletin 290 of the University of California., "The June Drop of Washington Navel Oranges," and gives account of this fungus which is known to be connected with certain phases of drop phenomena.

Last year's drop was caused almost entirely by climatic conditions. Hence, the bulletin referred to, written by Professor Coit and Mr. Hodgson, had little of interest for the fruit grower. To counteract the results of possible hot weather in June of this year summer cover crops were tried, buckwheat being used almost entirely, but instead of the dry, intense heat of last year, moister and much milder weather was given, and the fungous trouble, alternaria citri, has made serious inroads on the next crop of Washington Navels.

Mr. Hodgson, who has been coworker with Professor Coit in the investigation, has been observing the behavior of fruits and trees this year under summer cover crops and as to the work of the fungus. He will discuss the matter in the next issue of the California Cultivator.

This Week's War Notes

Transporting of American troops to Europe is now going on at the rate of 100,000 weekly.

Another U-boat has crossed the Atlantic and off the coast near Orleans, Massachusetts, sank a tug and four barges.

The American Indian is making good on the Marne front and has used his Indian cunning to the discomfiture of the Germans.

Physical requirements for the United States army have been amended so as to make the minimum height 60 inches and the minimum weight 110 pounds. The minimum height for the regular army remains however at 62 inches.

The news regarding the killing of Quentin Roosevelt has been confirmed by the dropping behind the American lines of a note by a German aviator. Report has also come that Major Theodore Roosevelt, Junior, has been wounded.

Sales of war saving and thrift stamps increased rapidly during July, but total sales to date are less than $500,000,000. This leaves a billion and a half to sell before January 1. Nebraska leads with an average per capita purchase of $16.64.

Rumors continue of revolt in Hungary, and now comes Bohemia with reports as to mutinies and expressed willingness to join armies of the Allies. Many serious revolts have occurred, and at one point 150 officers and men were shot and many others arrested.

The cruiser San Diego, formerly the California, carrying over 1200 men, is reported to have been sunk off the Atlantic coast last Saturday morning. Practically all men were saved. As to whether the sinking was caused by mine or torpedo it has not yet been definitely announced.

Our wounded men are not only being given best of medical care, but American Red Cross women, with fountain pens and postcards, follow the doctors on their rounds between the stretchers at the Paris station reserved for the hospital trains. Each man gets a chance to dictate a few lines. "Tell the folks at home we are all right" is the message usually sent.

German prisoners held near Irkutsk, Siberia, have secured control of the soviet government, and it is feared this may have bearing on the entire Russian question. On the other hand, Moscow reports the capture of the town of Birsk by Czecho-Slovaks and the soviet troops are in retreat. The Czecho-Slovaks still retain possession of Vladivostock and talk of intervention by the Allies continues.

The German people are apparently seeing things and thinking more soberly. The Cologne Gazette says: "The present clash of hostile forces is the most gigantic and terrible conflict of mental and physical energy ever seen. There is no room for platitudes. Now begins the final phase of the war." "The people at home will follow the development of this stupendous struggle with the gravest attention, for the enemy is now challenging us to put forth our very utmost efforts." The Strassburger Post inquires: "From where do these troops come that the American transports have really brought more quickly than they were expected?"

The Allies drive on the Germans continues on the French front. Much ground has been gained and every day sees material advance on the part of the Allies. The heights nears Chateau Thierry have been captured; thousands of prisoners have been taken, also hundreds of guns of large caliber. All excepting dead and captured Germans have been pushed north of the Marne and the Yanks and French are now using pontoons and bridges constructed by the Germans to cross the Marne. French and Italians have pushed the enemy back from Rheims. The line in Flanders is comparatively quiet, but fierce fighting has been kept up by the English, who have also captured many prisoners. France is wild with delight over the present situation. French and Americans have crossed the Marne on a 12-mile front.

Santa Barbara Community Dryer and Cannery

By W. V. Cruess

DURING the past spring Santa Barbara planted most of the vacant lots and many of the small fields near town to war garden vegetables. The success of these gardens resulted in the production of many times more material than could be used in the fresh state.

The war garden campaign was carried out to a successful conclusion through the efforts of C. W. Kirk, Mayor H. T. Nielson and others. The war garden commission of the city selected Mr. Kirk to be director of the war garden work without salary.

When it became evident that there was to be a very large surplus of war garden material it was decided to install some sort of a plant that would preserve this surplus and prevent its going to waste. Through the combined efforts of R. T. Stevens and the writer, a dryer and a small canning plant were designed. Estimates of the cost were made and then followed a campaign to raise funds to erect the dryer and cannery. The success of this campaign was due largely to the efforts of F. P. Knott and Mr. Kirk. Ample funds were subscribed by the community to build the establishment. The building was donated by the city. This building was formerly used as a gymnasium. The equipment and material were then assembled for the dryer and this was erected in the manner described in the following paragraphs.

Plan of Dryer and Cannery

The accompanying sketch will give an idea of the floor space available and the disposal of the various units of the equipment. This sketch may assist other communities in placing their equipment for such an establishment. From the sketch it will be seen that the building utilized in Santa Barbara is rather peculiar in shape and consists of a room 30 feet by 45 feet with a long narrow room at the back 70 feet by 12 feet. This long hallway was utilized to house the dryer. The large room was used for the canning equipment and preparation tables, as shown in the sketch.

The Drying Tunnel

Several types of dryers were considered. It was finally decided to choose the dryer known as the hot air blast tunnel dryer. The dryer, as built, consisted of a tunnel 23½ feet long and 37 inches by 57 inches in cross section. The tunnel, as shown in the sketch and in the photographs, was built of tongue and grooving over a two-inch by four-inch frame. The frame consists of two-inch by four-inch uprights, placed at such a distance that the dryer is divided into seven compartments. The top and rear of the dryer are solid and made air tight by a covering of light asbestos board over one-inch tongue and grooving. The front of the dryer, as will be seen from the photograph, is made up of seven doors, each 40 inches wide and of the height of the drying tunnel. The doors swing upward on hinges placed at the top. They are counterbalanced by weights attached to light cables which pass through a pulley directly above the door and through another pulley placed in the wall. The bottoms of the doors are fastened in place by an ordinary refrigerator clasp. The location of this clasp can be seen in Figure 3. The floor of the dryer in Santa Barbara was formerly used in the old gymnasium as a bowling alley. It is of oak, smooth, and air tight. An ordinary pine floor would answer the purpose just as well. The main consideration in constructing the tunnel is that it should be as nearly air tight as possible. For this reason, the space at the edges and at the bottom of the door should be padded with felt or some other material which will make the door as nearly air tight as possible when it is closed.

The Fan

The dryer is built on the plan of the use of air suction rather than an air blast. The hot air is drawn through the dryer rather than blown. This utilizes the drying effect of the air to better advantage because of the partial vacuum formed in the dryer. The fan used in this case is a 35-inch planing mill exhauster, which is operated at a speed of 1100 revolutions per minute. This will handle something over 5000 cubic feet of air per minute. Usually a second hand planing mill exhauster can be found in San Francisco or Los Angeles. At the time this fan was purchased there were several fans of similar size available in the city of Los Angeles. The fan is operated by a ten horse power motor, although the fan is rated at six horse power. The fan is attached by its suction intake to the outlet end of the dryer by a galvanized sheet iron hood, as shown in Figure 4.

This connection should be as nearly air-tight as possible to prevent the sucking of cold air by the fan. If an exhaust fan can not be found, it is always possible to locate a blower type of fan. If this type of fan is used it can be placed at the intake end of the dryer and the hot air can be blown through the tunnel. This fan, while satisfactory, is not considered so desirable a type as the exhaust fan. The fan should deliver at least 5000 cubic feet of air per minute for a dryer of this size.

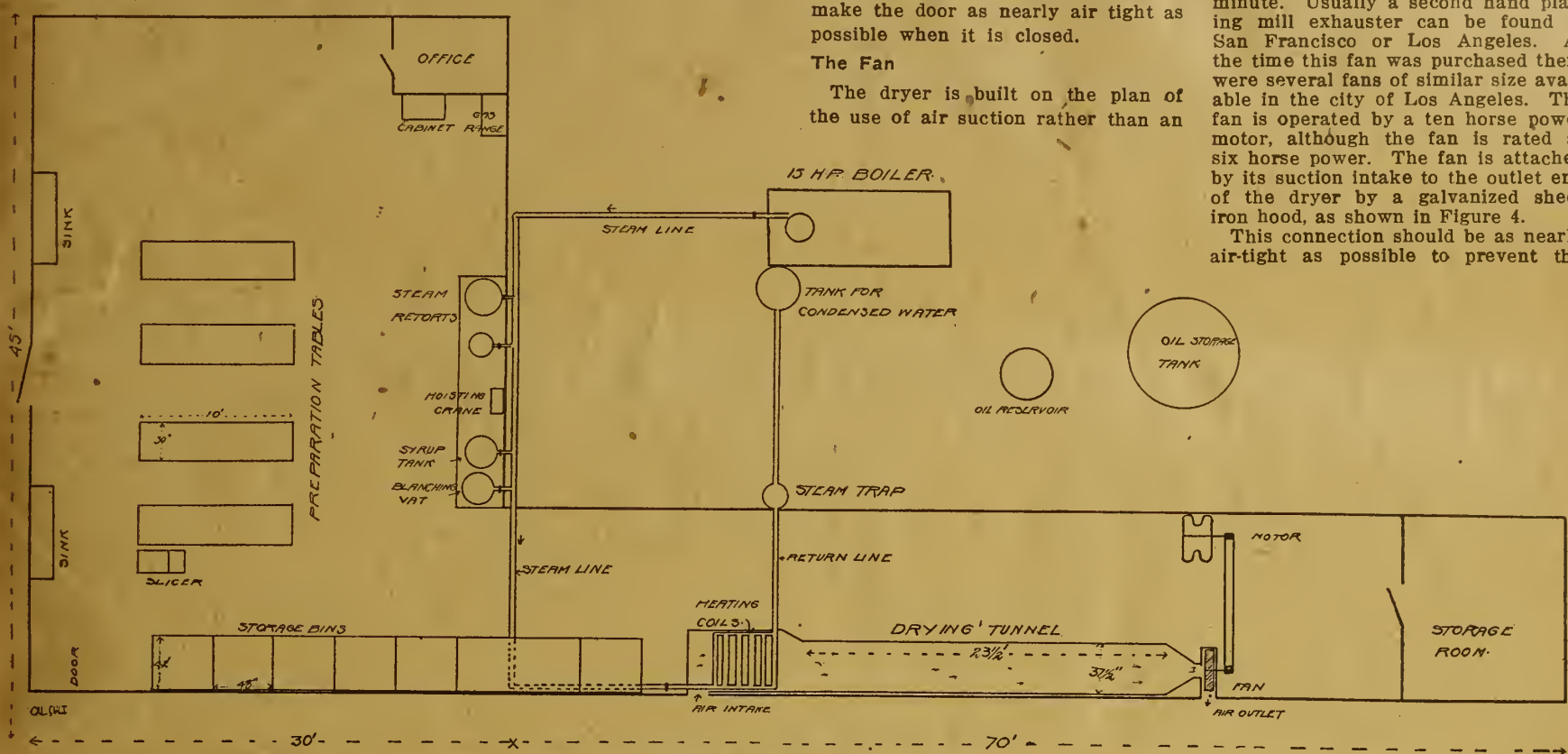


Fig. 1. Plan of Santa Barbara Dryer and Cannery

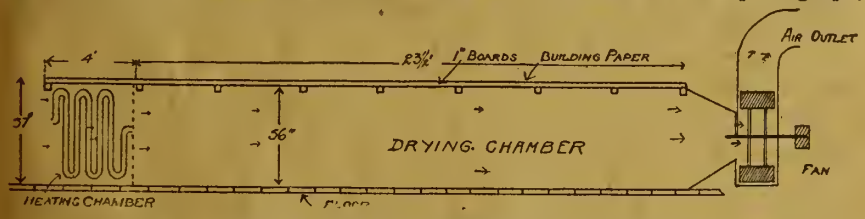
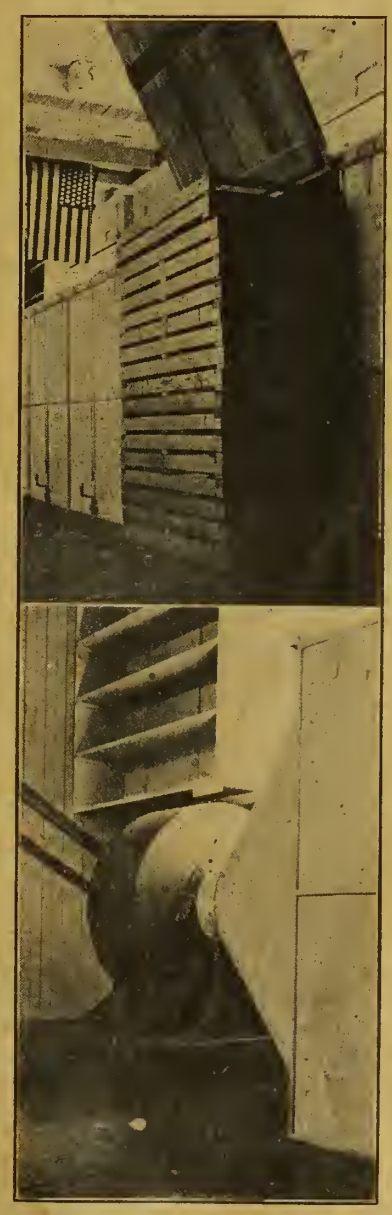


Fig. 2. Longitudinal Section of Dryer



Figs. 3 and 4

Above, drying tunnel showing stack of trays ready for the dryer.

Below, exhaust fan showing on right connection of fan to tunnel.

Air Heating Apparatus

There are two methods by which air may be heated for a dryer. One is by a direct radiation from a furnace in which crude oil or coal is burned and the other is by radiation from steam pipes. The latter method was chosen because it can be more carefully and accurately regulated. To furnish the steam for the air heater, a 15 horse power boiler was obtained and installed. A ten horse power boiler would have been large enough for the purpose but a 15 horse power boiler was chosen because it was desired to use the extra five horse power for operating the cannery. The boiler is mounted on a cement base and is enclosed in brick. It is of the return tubular type and uses crude oil as fuel. A 300-gallon tank has been mounted about 20 feet above the ground to furnish the boiler with fuel. A storage tank for oil of 2000 gallons capacity has been set in the ground near the boiler. The fuel is pumped from the lower tank to the supply tank with a small hand power rotary pump. The heating compartment is connected directly to the drying tunnel. This compartment is six feet long and 65 inches high. It is 52 inches wide. It is joined to the drying tunnel by a slanting strip of wood 20

Continued on Page 79

Agricultural News Notes of the Pacific Coast

Northern California

The cannery at Yuba City started its season's work July 20.

California state fair at Sacramento will be free to all soldiers.

Yolo County canners have agreed with laborers on wage scale.

Hayward Pigeon Club has arranged for a show November 2-6.

A sheep herder on Bald Mountain was fined $50 for leaving a camp fire unattended.

San Jose reports laborers in excess of real demand on the part of the fruit growers.

Napa fruit growers recently had the opportunity of attending a three-day apple-packing school.

A specialist of the department of agriculture has been recently aiding in fruit growing districts.

A grain elevator has been erected at Monroeville, Glenn County. This is the first for that county.

Eldorado County Duroc Swine Breeders' Association has elected Farm Adviser Jones secretary.

The Chamber of Commerce of Anderson, Shasta County, is discussing measures for mosquito control.

Placer County wants an olive packing and oil making plant. She grows some of the finest olives.

There will be farm center meetings in El Dorado County at Northside July 23, Placerville 25, Union 26.

Placer County fruit growers are discussing advisability of going to the Valley or to Nevada to buy carlots of hay.

Solano County's exemption board has made announcement that all men in Class 1 have been called to the colors.

Santa Rosa reports this year's crop of Gravenstein apples the biggest on record. Most of the apples will be shipped green.

It was rumored that the various creameries of Humboldt County had merged under one management, but this has been denied.

Amador County is anticipating showing its fitness for fruit growing by taking the step of securing horticultural commissioner.

One Sutter County orchardist grew 218 sacks of barley between fruit trees and reports trees growing and in best of condition.

Farm center meetings of Napa County will be held at Soda Canyon July 20, Chiles Valley 23, Union 24, Pope Valley 2, Mt. George 27.

A conference was recently held between white employers and Indian tribes near Lake Tahoe in the effort to induce the Indians to go into harvest fields.

Prune and apricot growers of Chico have joined the California Prune and Apricot Growers' Association, electing L. C. Shirley president and D. C. Irwin secretary.

The berry crop in the Gold Ridge section of Sonoma County will be largely harvested by high school boys and Y. M. C. A. workers. The crop is unusually large.

On the California State Colonization project at Durham, Holstein cattle and Duroc-Jersey hogs will be the only breeds allowed. Which breeds should be kept was determined by vote of the settlers.

Central California

Long staple cotton planted at Corcoran is showing up well.

Hoppers have done much damage in Tulare County alfalfa fields.

The Turlock district is now making heavy shipment of cantaloupes.

Tulare County grape and alfalfa crops are menaced by army worms.

Salinas observed its Big Week in its California Rodeo last week.

Grain farmers of Madera County are organizing fire protection volunteers.

A census of beef cattle in the state is urged by the California Cattlemen's Association.

There will be farm bureau meetings at Stratford, Tulare County, July 23, Oak Vale 27.

Monterey County bean growers are organizing a branch of the state bean growers' association.

Cotton gins are being installed at Bakersfield, Kern County, and Corcoran, Kings County.

The beets supplied to the Visalia sugar factory are coming from as far south as Kern County.

Final payments for 1917 dried peaches are just being made to the growers of Fresno County.

The United States department of agriculture forecasts the next corn crop at 3,160,000,000 bushels.

Ripon, San Joaquin County, has found its first year as a cantaloupe producer a complete success.

Sweat box price for Thompson Seedless has been placed at 6¾ cents; Sultanas, 6½ cents.

The campaign of fumigating citrus orchards because of gray scale began at Lindsay, Tulare County, last week.

Fresno County fruit growers are fitting up pickers' and harvesters' camps which are not only sanitary but attractive.

The Grange Patrons of Husbandry of Ft. Romie, Monterey County, is growing and many new candidates were given degree work recently.

Reports that the Alfalfa Growers Association would ask $30 a ton or that it had set any price at all are denied by J. L. Farrar, manager of the association.

Raisin growers feel that the outlook for a good crop and fair prices was never better. The Associated Raisin Company is in best of form in the markets.

The Visalia sugar factory is one of the first in the United States to take up the work of relieving the present sugar shortage. Its run began the first of July and shipments of A-1 sugar have been proceeding regularly ever since.

Forest supervisors are enforcing the regulations regarding the leaving of camp fires, and one visitor to the redwoods near Hot Springs, Tulare County, was recently fined $50 for leaving his fire, which had not been entirely extinguished.

The California Peach Company has arranged to deliver peach pits to the United States army to be used in the manufacture of gas masks. The peach pits make a charcoal having extraordinary absorbent qualities which when used in the masks enables our men to stay in gassed trenches for 18 hours while ordinary charcoal becomes saturated in three.

Southern California

Canneries at Hemet are now employing over 1200 people every day.

Prof. Fawcett is conducting scaly bark demonstrations before members of the Los Angeles County farm bureau.

California's production of beans will exceed that of last year by 25 per cent if present estimates are realized.

The South Coast Honey Producers Cooperative Exchange has filed articles of incorporation in Ventura County.

The Chino Valley Apple Growers' Association is making arrangements for its season's crop at the Narod packing house.

Citrus growers generally report setting of next season's crop as nearly normal. A very few sections report only 50 to 60 per cent.

Careless squirrel poisoners near Fillmore left sack of poisoned grain accessible to stock, and valuable horses were poisoned.

Imperial Valley has finally started some of its immense grain crop to market, some days seeing a dozen or more cars moving out.

The new big cannery at Chino, San Bernardino County, started on Thursday, July 11, on apricots; tomato canning will be taken up later.

Department entomologists report that infestation of cotton boll worm in Palo Verde Valley is very light, not over two or three per cent.

Employment bureaus in Los Angeles maintain that they have sufficient labor to handle all fruit crops in the southern end of the state.

Imperial Valley water shortage danger has passed after about two weeks shortage. Last year's shortage period covered nearly two months.

Pomona canneries are employing 500 hands on apricots. The output will be smaller than last year. Peach canning will begin about August 1.

Dr. H. S. Fawcett has returned from his two years in Johns Hopkins University and will again be connected with the citrus experiment station at Riverside.

Ventura County bean growers report a leaf hopper attacking bean vines and doing immense damage; no report is yet made as to name of the insect.

Rancho Sespe in Ventura County recently purchased $32 worth of Red Cross newspapers. They are to be used in wrapping young trees to protect from sun, rabbits and frost.

Hemet-San Jacinto apricot growers have added to their cannery a vacuum plant for making apricot jam; which will add greatly to the output of that section which has over 2500 acres of apricots.

Mrs. H. K. Davis of the department of agriculture, who was in Southern California encouraging greater use of cottage cheese and other healthful foods made from skimmilk, finds Southern California has done but little wasting of this particular food.

Los Angeles County farm bureau has found the average wage scale in that county: Hay harvesters, $3.00 without board; tractor drivers, $4.00 for small; $5.00 for large; teamsters, plowmen, fruit pickers, $2.75 without board; irrigators, 35 cents an hour; general farm work with board, $60.

The Coast and General

Montana pine is being used in aircraft building.

Much of lowland farm land along the Columbia River was under water during recent flood time.

The government has taken over importation of wool from Argentine, Uruguay and South Africa.

The Pacific Northwest will hold a second tractor and power farming demonstration in May, 1919.

Value of food sent by the United States to its allies during the past year aggregated $1,400,000,000.

Airplane mail service New York to Washington began July 10, time 2½ hours, or about 90 miles an hour.

The government of Tasmania is sending its pomologist, J. W. Ward, to study fruit culture in California.

The annual convention of the Washington Good Roads Association was recently held at Pasco, Washington.

Small sheep owners on the Minidoka reclamation project consolidate their flocks so as to save herdsmen.

The council of defense for Montana has loaned the farmers of that state $325,000 in order to increase crop production.

Latah County farm bureau, Idaho, is uniting its members who have a few sheep so as to handle the wool on the same basis as the large producers.

The state department announces that it has arranged to export to Mexico 1,500,000 bushels of corn in addition to other foodstuffs and agricultural machinery.

Banana bread is popular in Jamaica. It is made from green bananas boiled in salted water and added to ordinary bread dough in proportion of 30 per cent to the whole.

Owing to shortage of shipping, Argentina farmers are receiving only 54 cents per bushel for corn. The price of a ton of coal is more than twice that of a ton of corn.

Word has come from China of the death of Plant Explorer Frank N. Meyers, one of the best known explorers in the government service. He was drowned in the Yangtze River.

The Wenatchee district of Washington reports the largest crop of fancy cherries in years. The crop as a whole was not as big as last year but the proportion of fancy's was very large.

L. P. Branstetter of Marshfield recently brought 525 head of Hereford cattle from Stockton, California, and placed them on his stock range in the Coquille Valley, Oregon. The purchase price is reported as $20,000.

The federal government has contracted with the Chinese government shipyard at Shanghai to build four large cargo vessels, 10,000 tons each, and other vessels as soon as possible. The program involves $30,000,000.

The state inspector of Oregon has given warning to California potato shippers that if potatoes affected with tuber moth are shipped into that state an effort wil be made to declare a quarantine against all California potatoes.

A sugar board is the latest. It will take charge of all sugar supplies in the United States with a view to securing satisfactory distribution. President Wilson has advanced $5,000,000 of his special fund for the use of the board.

Control of the Red Spider

By E. Ralph de Ong

INJURY from the attack of red spider is beginning early this year and the more injurious form of webb spinning mites (Tetranychus) are reported from the middle coast counties where usually they cause little trouble. There are two species of red spider, or plant mites, common on prune, plum and almond trees and on beans: the one called Bryobia is not a web spinning mite, its body is usually a greenish color, but with red legs. These are found on the under sides of the leaves. The second and more injurious species is abundant in the interior valleys but is present also in the coast countries. These have a pale greenish or yellowish body, the adult showing dark spots at the sides of the body. These mites spin a light web on the under side of the leaf, scattered about in which will be found the eggs, transparent, perfect little spheres. Both of these species are so small that it is only with difficulty that they can be seen without a hand lens. Usually the first indication of their presence is the leaf turning pale or yellow, followed by defoliation if the attack is serious.

Injury by Red Spider

The spider feeds on the leaves of the plant attacked, piercing the leaf covering and drawing out the sap and chlorophyll (the green coloring matter), soon causing the leaf to turn pale and dry up. The attack usually begins on the lower leaves and extends upward until the entire plant is infested. The damage is more severe than that resulting from the attacks of most sucking insects, which feed principally on the sap, for the chlorophyll extracted by the spider is the substance necessary for manufacturing starch from carbon dioxide and water in the presence of sunlight, and when this action ceases the growth of the plant is arrested until more chlorophyll can be formed. Annual plants such as beans and squash may be entirely destroyed by the continued feeding of the mite. Almond, peach, prune and a few other orchard trees are frequently defoliated early in the summer, subjecting the tree to danger of sunburn and decreasing the amount of sugar and other nutrients in the almond and prune crop. Hence the output for the season is lowered and the store of plant food, produced by the tree for the early spring growth, is so reduced that the following year's buds are injured.

Dispersion

The mites thrive best in hot, dry weather, hence they are most abundant in the summer and fall, but nevertheless they were present in the spring on wild morning glory or other hardy vegetation, or, in the case of the Bryobia, on the trees where the egg was hatched. As the temperature increases in the early summer there is more of a tendency to migrate, and also they are becoming abundant enough so that the wind carries them about from plant to plant, thus starting new areas of infestation.

Control

Sulphur has for years been the standard remedy for red spider and is still the most satisfactory material, providing its limitations are known. Dry sulphur at a temperature of 70 degrees Fahrenheit or above gives off a volatile gas which is fatal to newly hatched spiders at a distance of a very small fraction of an inch. Hence it is necessary to make this application, first, at the proper temperature; second, early enough in the year so that the adult spiders present (which are not affected by the sulphur fumes) are not abundant enough to injure the plant; third, the sulphur must be evenly distributed and on the under sides of the leaves. Nothing is gained by throwing sulphur on top of the leaves nor in scattering it in coarse lumps through the plant or on the ground. Dry sulphur has been shown to be effective against the young mite over a period of two or three weeks while the eggs hatch in four or five days in the summer. Hence a careful application of dry sulphur before the damage by the spider is severe, or a wet spray of sulphur combined with a spreader such as flour, glue water or fish oil soap will quickly kill many of the young mites present at the time of spraying and will be effective over a sufficiently long period of time to kill the nymphs hatching from the eggs present at the time of spraying or deposited during the few days following. A coarse grain of sulphur is no more effective than a very small grain, for the fumes are efficient only over a small fraction of an inch, hence the necessity of great care in making the application. And since finely ground sulphur is equally efficient and easier to apply with dusting machines and less liable to be dislodged than coarse particles, it is very important that a fine grade of sulphur should be applied. Very finely ground sulphur does not always flow smoothly in a dusting machine, hence it is sometimes advisable to make a mixture of one part hydrated lime or kaolin and two parts of sulphur when applying a dry mixture. Sulphur thus diluted is less liable to burn than when applied pure; however, material should never be applied at a temperature above 100 degrees Fahrenheit if possible.

Orchard trees subject to the attack of red spider should receive an application of sulphur the first week in July or as soon after as convenient. In severe infestations two or three dry sulphurings may be necessary. Late planted beans should be treated about the first of August or just after the last cultivation and before the vines have matted, one application usually being sufficient to check severe damage.

Methods of Applying Sulphur

Sulphur may be applied in two ways, either as a wet spray or as a dust applied by means of a blower. Before sulphur can be used as a liquid spray it must be combined with a caustic to form a solution such as lime-sulphur or be made wettable by combining it with some other material so that it will remain in suspension in the spray tank. In this form it is applied with the common power sprayer. Our commercial insecticide houses are now putting out a finely ground sulphur combined with a spreader to form a paste which, when applied as a wet spray, gives a very even distribution of sulphur over the leaves. Professor George P. Gray of the University of California introduced last year a method of mixing sulphur and water by means of a solution of glue, one ounce of glue being used to a gallon of water. One and one-quarter gallons of this solution is required to mix ten pounds of sulphur, enough for a 200-gallon tank of spray, the materials costing less than 50 cents a tank. The mixture may be applied with any liquid spray outfit.

Dry sulphur has been applied by hand with tin sifters or cloth bags, but the more economical way and one which gives the best distribution is by means of a blower operated either by hand or by power. The Vermorel machine has been the standard in this country for years, but is now off the market. American machines are now taking its place, good knapsack sprayers being manufactured in California at present, and two makes of power blowers operated by means of gas engines are now available.

The comparative cost of hand versus power machines in sulphuring bean fields in the experiments carried on this summer are as follows:

Knapsack sprayer:

15 pounds of sulphur to the acre (Cost of sulphur based on a price of $4.50 per hundred.)	$0.67
Three-fourths to 1¼ acres per day (one man at $3.00 per day)	3.00
Total cost per acre with knapsack sprayer	$3.67

Power machine:

37.5 pounds sulphur per acre	$1.69
30 acres per day (two men and one team per day) (Power machine covers eight rows at a time.)	$8.00
Cost of operating machine, per day	.50
Total	$8.50
Average cost per acre	.28
Total cost per acre with power blower	$1.97

This leaves a balance in favor of the power machine of $1.70 per acre, but the greatest advantage in the power outfit lies in the possibility of treating a large acreage in a short time, checking an attack before it becomes serious and to a large extent irrespective of labor conditions.

Comparing the efficiency of the two types of machines, the cost of the power blower is no greater than that of the number of hand machines which will do an equal amount of work.

There seems to be little difference in the relative efficiency of wet and dry applications of sulphur providing the material is equally well distributed. The common experience of orchardists seems to be that a wet spray is more expensive than dusting but a better distribution is often attained together with greater adhesiveness. A dust spray is cheaper but it is often necessary to repeat the treatment on trees especially subject to attack. Dry sulphur on the leaves of almond and prune trees sometimes causes annoyance to the pickers by getting into their eyes, and in this case also the liquid spray would have a slight advantage.

Cooperative work in the control of spider is not as essential as with some other pests, each orchard being treated as more or less of a unit. It is true that the spider may be carried a considerable distance by the wind but this would only amount to a few rows, and the presence of sulphur would check new infestations over a period of several days.

Tractors Increase Man Power

The advantage of the tractor, like that of most other improved farm machinery, lies not so much in the reduction of the cost of performing a unit of work as in the fact that it permits one man to do considerably more work in a given time, according to Farmers' Bulletin 963 of the United States department of agriculture, which is a report of the experiences of over 600 farm tractor owners on representative corn belt farms in Illinois, collected during 1917 and the spring of 1918. This has been true of practically all improved farm machines, the bulletin explains. Even the grain binder, generally considered as one of the greatest agricultural inventions of the century, which has increased about eight-fold the acreage one man could handle, has not resulted in decreasing materially the cost of producing grain.

Men who hope to reduce greatly the cost of farming operations by the purchase of a tractor should bear these facts in mind. Judging by the experience of tractor users it is not safe to expect any material reduction in the cost of farm operations per acre through the use of the tractor, but it is safe to expect to be able to increase the crop acreage to a very considerable extent, and, at the same time, the amount of crops which one man can raise.

Furthermore, it should be remembered that the cost of doing the work with a tractor in most cases can not be directly compared with the cost of doing it with horses, since on farms where tractors are used a number of horses generally are retained, and any comparison, therefore, must be made between the cost of operating the farm with horses alone and the cost of operating with the tractor and a certain number of horses. Not infrequently horses stand idle while the tractor is being used for field work, because there is not sufficient help available to use them at the same time, and in such cases part of the cost of their maintenance must be considered when figuring the cost of farm operations, since they are as much a part of the farm power plant as is the tractor.

Not only should the relative expense of operation with the two methods be considered, but also the relative results. The increased crop acreage and consequent increase in incomes which the purchase of the tractor will often make possible may much more than offset a slight increase in the operating expense of the farm.

RURAL MOTOR EXPRESS

The United States food administration has endorsed the extension of rural motor express as an aid to food production and distribution. In a letter to the highways transport committee of the council of national defense, Mr. Hoover says:

"The development of the rural motor express idea in my opinion is in line of progress and should redound to the benefit of the producer, the consumer and the railroads. This means of transportation should facilitate delivery, conserve labor, conserve foodstuffs and should effect delivery of food in better condition."

The rural motor express plan which is already in operation in the vicinity of numerous cities is essentially a regular motor truck service enabling farmers to send farm products to town and get supplies, machinery and repairs without making a personal trip.

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Orange, Lemon, Pomelo and Lime, bud selected (pedigreed) trees, subject to immediate delivery. Correspondence invited and prices cheerfully quoted.

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Riveted Pipe—4, 6, 8, 10, 12, 14, 16, 18 inch.
All above pipe and casing is practically as good as new, with good threads and couplings on each joint. We also carry valves and fittings, pumps, engines, boilers and rail. See our stock and get prices before buying elsewhere.

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Prune Canvass Opens

OF interest to all prune growers is the statement issued by the California Prune and Apricot Growers in the Sunsweet Standard," their official organ.

On the morning of July 10 word was sent out from the food administration to growers' associations and packers dealing in licensed dried fruits, that all restriction regarding the purchase of growers' crops had been removed and associations and packers are now at liberty to contract for the delivery of 1918 prunes, peaches, raisins and apples.

Very prosperous conditions obtain in the prune industry. Unlike apricots, although we have suffered somewhat from the loss of an export market, we have a considerable government requirement that will largely make up for the market's restriction to the domestic trade. We have also, as compared with recent seasons, a rather light crop; whereas in apricots present estimates of dried production run into figures greater than production of any previous season.

These prices are of course named on a graded basis, and as many growers in the state have been in the habit of delivering and receiving settlement on the basis of the door test, it is understood the government is working on a scale of prices which will be more or less a just settlement on door tests. These prices, of course, cannot be accurately determined as the proportion of grades in different deliveries are never alike. The door test has been a simple matter in the past where the differential of $1.00 a point per ton has governed the price paid; but this year with the extraordinary premiums and differentials, this proportion has become so involved as to make a door test settlement rather a difficult matter. Growers in selling to the packers, it is understood, will be allowed to request a grading of their fruit, providing they are not satisfied with the method of settlement on a door test.

The association management has been particularly pleased to note that the plan of our organization absolutely meets the food administration's requirements under present war conditions. We have been inclined to believe that our form of organization is the only proper and scientific method of economically marketing our crop; and now that the government has come in with a desire to put the distribution of food products on a sound economic basis, we find ourselves already working along exactly the lines required.

During the next few weeks we are anticipating canvass of independent growers throughout the state with a view to securing their membership in our association, and have no doubt that under present regulations many growers will be induced to join with us. Under present regulations packers will not be allowed to pay exorbitantly excessive prices to any individuals, and growers will not withhold their membership in anticipation of such prices as were in some instances paid last season. We trust that all of our members will interest themselves in our organization work, and wherever you have neighbors or others favorably inclined you will acquaint our organization department of the fact, and we will have our representatives on the job. We must all realize that it is only according as we can maintain and increase our handling of dried prunes and apricots that we can anticipate the ultimate success for which we strive. We want you to assist us in our appeal to all growers to join with their neighbors in whatever profit or burden may be attached to the maintenance and development of present and future markets.—H. C. Dunlap.

Prices for Prunes and Apricots

As to prune and apricot prices, the Prune and Apricot Growers' Association issues the following:

Prune Prices

Government food control authorities, guided by information from prune growers have fixed maximum prices to be paid growers. These run as follows:

20-30's	15c flat
30-40's	10c base price
40-50's	9½c base price
50-80's	8½c base price
80-100's	8c base price
100-120's	4½c flat
120-up	4c flat

These are large prices and those who have a normal crop will, this year, receive good returns. But many have crops so light as to make returns below normal. The packer will doubtless be allowed to add 5 per cent to cost price as his profit in selling to the trade, and of course the association will receive the same and this comes back to the grower. Thus the association member will receive a little better than can the non-member.

The premiums on 30-40's and 40-50's of 1½ and 1 cent, cannot be had by a door test and can also be easily eliminated if the grader so wills. It will be a measure of comfort to the member who has been holding the umbrella so the outsider could beat the holder a little in price, to know that this year conditions will be reversed and he will beat the outsider in price. Not much, but some.

Apricot Prices

Growers can surely appreciate the present condition of the apricot market from the fact that since very early last season packing institutions antagonistic to our association movements have in no instance offered or paid particularly excellent prices for the dried product. Early in the spring in the case of some few growers who held dried fruit over from the 1917 crop, they were offered only prices in the neighborhood of 12c and were in many instances induced to join the association. So far no prices whatsoever have been offered to growers on the 1918 crop, although 12c has been rumored in a couple of instances. Some of the larger packing institutions have recently offered the new crop in the East at prices ranging from 10 to 16 cents in the grades from Standard to Fancy. These prices are slightly under last season, especially on the smaller grades. The association, taking into consideration the fact that the opening price must always be the lowest price at which sales are consummated and is always a price that can be raised when conditions warrant, and further, taking into consideration that only a small portion of possible production has been sold in futures, has seen fit to open with the following prices:

	Bulk Basis
Standards, pkd. under no brand	.09½
Slabs, " " " "	.11
Choice, Sunsweet Brand	.13
Ex. Choice " "	.14½
Fancy " "	.16
Ex. Fancy " "	.17½
Fancy Moorparks " "	.17½
Ex. " " " "	.19

On the Growers' Brand, ½c under these quotations.

WALNUT PROSPECTS

A serious situation is confronting many walnut growers because of "dieback," "kiil back" and winter injury. The tops of the trees in nearly all producing sections are showing this trouble. Commenting on the situation near Fullerton, the Orange County Tribune says:

Following the heat injury of last summer, many growers felt that the burning was so severe as to seriously affect the crop of 1918. But the prospects are for a fair crop in most sections. Where the heat injury was not severe, the trees have put out considerable new growth and show a good crop, there being quite a number of doubles. Where the burning was more severe the crop will be only fair.

The West Covina district seems to be in better shape on the average than either the Pomona or Whittier sections, in Southern California, but the crop is somewhat varied, even in different sections, some orchards being better than others.

What crop there is promises to be of excellent quality, the nuts being exceptionally large for this early in the season.

Winter injury, manifest by the dying back of limbs, is very prominent this season. A number of three and four-year-old trees were killed back to the ground. There seem to be two more or less distinct causes for the prevalence of winter killing this season.

The exceptionally long growing season of last year caused many of the trees to grow too late, and the wood was not properly matured, and, consequently, was very easily injured by even light frosts.

The growing walnut is almost as susceptible to frost injury as a tomato vine or bean. This type of winter killing is found on lands of low elevation, and more especially where the water-table is high and the tree is kept growing late.

Where the water-table is not high, irrigation should be stopped by the end of August to force the trees to mature their wood.

There is another type of winter injury which occurred on the higher lands where the wood was properly matured, and the cause may be laid to the extremely long, hot, dry fall.

In this case the injury simply is due to the desiccation or dying out of the limbs, such as is common with other fruit trees in the Great Palms area.

The best way to avoid this type of injury would seem to be by judicious winter irrigation, such as is practiced in the Santa Ana section.

FARM AND HOME DRYING OF FRUITS AND VEGETABLES

Farmers' Bulletin 984, which may be had free by writing the United States department of agriculture, Washington, D. C., is a 62-page bulletin with complete text and many illustrations. It is written by Joseph S. Caldwell of the office of horticulture and pomological investigations.

Imperative necessity demands nation wide conservation of those portions of our food crops which have

heretofore been permitted to go to waste. A considerable portion of this wasted food material is made up of perishable fruits and vegetables produced in home gardens and fruit plats in excess of the immediate needs of the producers and in the absence of accessible markets for the surplus.

Drying offers a simple, convenient and economical method for preserving food materials and permits the carrying over of the surplus into periods in which fresh fruits and vegetables are not so plentiful.

COMMUNITY DRYER

Continued from Page 75

inches wide, making the total length of the heating compartment almost eight feet. It is covered with light asbestos board. The heating coils consist of two units. One is made up of four steam heaters obtaining in all 50 pipes, 60 inches tall and one inch in diameter. These are plain upright pipes sealed off at the top with caps.

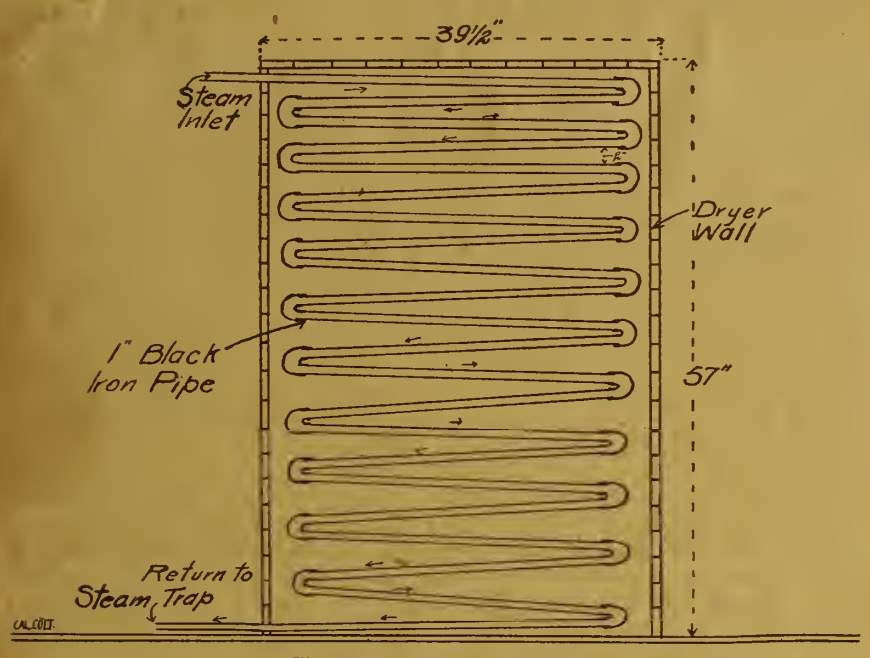


Fig. 5. Plan of Heating Coil

They are set in steam headers; each header being connected to steam line. The other unit consists of coils of one and one-quarter inch diameter and constructed on the plan of Figure 5, in such a way that all sections of the coils slant towards the bottom. This causes the water which condenses during the passage of the steam to flow downward toward the steam trap. The steam is admitted at the top. Between each of these coils has been placed a sheet metal baffle. The first baffle is attached to the roof of the heating compartment, the second one to the floor, and the others alternating in similar fashion, so that the air is forced to flow upward and downward over each individual coil and in this way absorbs the maximum of heat during passage. Steam at 100 pounds pressure is passed through the coils. The temperature is regulated by the amount of steam which is delivered. This is controlled by the use of steam valves located near the coils. A great deal of water condenses during the passage of the steam and this water of condensation is returned to a small tank near the boiler by means of a steam trap placed outside the building. The water of condensation is then pumped back into the boiler by a small boiler feed pump and used over again. The condensed water is especially desirable for boiler purposes because in the condensation process the lime salts are removed and there is less tendency for such water to corrode the boiler tubes. No data are yet available upon the cost of fuel for the operation of the dryer. The heating compartment opens to the outside air. This is essential in order that no moist air shall be drawn from the room.

(Continued next week.)

DANGER IN HOME CANNED FRUITS AND VEGETABLES

Home canned vegetables should be cooked always before serving, according to the California state board of health. The board also states that home canned fruits, especially when put up by the cold pack process, should not be used if there is even a slight suspicion of fermentation. This advice is not given for the purpose of discouraging the home canning of fruits and vegetables, but the board desires to acquaint the public with the facts relative to severe cases of food poisoning that have occurred in California and other states through the use of these home canned products.

Housewives are urged to recognize that the present methods of home canning are not entirely safe, especially in the hands of untrained workers. The chief danger lies in botulism, a poisoning which is produced during the growth of the bacillus botulinus, an organism that produces spores and grows in the absence of oxygen and is therefore very difficult to kill by the ordinary method of heating. When the spores have not been completely killed in the canning process, they proceed to grow under the favorable conditions, notably the absence of oxygen, which they find in the interior of the receptacles used in putting up fruits or vegetables.

Dr. Ernest C. Dickson of the Stanford University medical school has recently made exhaustive researches into botulism and he reports 32 outbreaks that have occurred in the United States, in which 81 persons were poisoned and 55 died. According to Dr. Dickson the increase in the number of outbreaks in this country bears a very interesting relationship to the marked increase in the practice of home canning of perishable goods which has taken place during the past few years.

Among the fruits and vegetables found by Dickson to have been the cause of botulism were asparagus, beans, corn, peas, apricots and pears. It is certain, however, that the growth of the bacillus is not confined to these particular products. Therefore, no chances should be taken with any fruit or vegetable that shows evidence of a slight degree of fermentation, spoilage or alteration of taste.

If the fact is borne in mind that the poisoning is due not to the germs themselves, but to a toxin or poison produced by them during their growth and that this toxin is easily kiled by boiling for a short time, there will be no need for discontinuing the practice of home canning. Make it a rule to cook all such products before serving and all danger will be absolutely eliminated.

SCALY BARK DEMONSTRATION

Los Angeles County farm bureau recently conducted at San Dimas a demonstration of treatment of scaly bark disease of oranges. H. S. Fawcett, Ph.D., and 250 orange growers discussed this topic and observed Dr. Fawcett's method of practical treatment. In a word the treatment consists of cutting out diseased bark and wood, painting with Bordeaux paste or a five per cent solution of carbolic acid. The formula for Bordeaux paste has been given in former Cultivators. The five per cent solution consists of five parts crystal carbolic acid to 100 parts, by weight, of water. Dr. Fawcett said one necessary precaution was inspection at least twice every summer by every orchardist. If taken at its inception scaly bark may be controlled. If, however, it is allowed to remain without treatment for years it not only becomes incurable so far as the tree is concerned, but may be spread to other trees. It is expected that Dr. Fawcett will now give much of his time to investigation of this particular disease which is but little understood.

Hit hard and quick for all we have and are and hope to be!

FOURTH LIBERTY LOAN

D. O. Lively, director of agricultural division of the twelfth district of the liberty loan executive board, writes: "From all indications the fourth liberty loan, which comes on in October, is going to be a whale. It does not require any argument to show you that the farmers will have to absorb a large part of this loan. They did splendid service in the last loan, but that was only a beginning." Mr. Lively then adds a note regarding the value of $2.40 wheat and some other points wherein farmers have been disappointed, and suggests: "Regardless of these or anything else the bond issue must be sold."

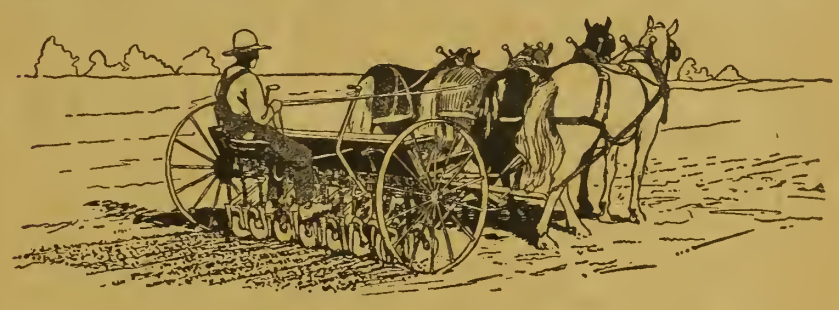
WHAT ARE DRIED APPLES?

The following definition and stand ard for evaporated apples was adopted by the Joint Committee on Definitions and Standards August 7, 1916, and was approved by the Association of American Dairy, Food and Drug Officials:

"Evaporated apples are evaporated fruit made from peeled, cored, and sliced apples, and contain not more than twenty-four per cent of moisture as determined by the official method of the Association of Official Agricultural Chemists."

The foregoing definition and standard is adopted as a guide for the officials of this department in enforcing the Food and Drugs Act.

Three Operations Finished In Once Over the Field



JOHN DEERE

VAN BRUNT

Single Disc Grain Drill

It is war time thrift to use a Van Brunt Grain Drill. In one trip over the field it pulverizes the soil, makes the seed furrows, drops and covers the seed. The Van Brunt Grain Drill makes horse power and man power available for other purposes—it helps solve the labor problem. Besides saving labor, a Van Brunt Drill will increase your crop yield because it does better seeding.

Patented Adjustable Gate Force Feed—Insures Even Seeding

All the seed is planted at the same depth—evenly, uniformly from every feed. All the seed reaches the bottom of the furrow. It matures evenly. No seed is wasted. Thorough seeding, you know, means much towards increasing your crop production. Van Brunt Drills do first class work in any soil capable of being seeded and do not choke up in mud, gumbo, sticky or trashy ground. Save labor, save seed and increase your crop yield by using a "Van Brunt" Grain Drill.

These Books Free for the Asking

"Better Grain Yields From the Same Fields"—32 pages beautifully illustrated, telling how to select, test and plant seed. Also *"Better Farm Implements and How to Use Them"*—a 156 page text book on farm implements. Worth dollars.

To get these books just state the implements in which you are interested and ask for package B P43.

JOHN DEERE, Moline, Illinois

Mr. Rancher:

Do you need hay and pasture for your stock? Do you know that if you will irrigate your land at once and drill in twelve pounds of Sudan Grass per acre, you can in eight weeks cut four tons per acre of No. 1 hay?

Irrigate and again in four weeks cut another two or three tons per acre, and after that pasture until destroyed by frost.

This is a fact! Try it now! Get your seed from

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of the "Giant" Type

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WE SEND THEM ON THREE DAYS' TRIAL

So extremely simple, a child could operate one, as a simple twist of the wrist raises and lowers the bucket or holds it stationary, as the case may require.

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Farm for Profit

and Help U. S. Win the War

Authoritative tests have proved that as high as 50 per cent increase in crop production may be expected from proper use of fertilizer. Do you realize what that increase means? Fertilizer is the basis of crop production, and compared to the prices of the crops they help to produce, fertilizers were never so cheap as they are today.

MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

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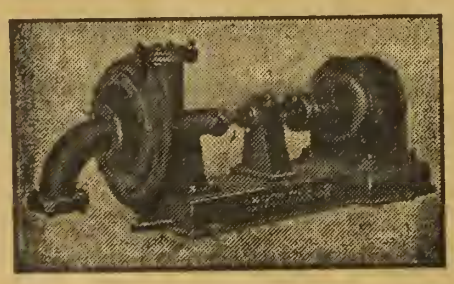

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Mulching Basins About Citrus Trees

THE citrus experiment station at Riverside has been conducting experiments in fertilizing, mulching and manuring citrus orchards for many years. In some cases indifferent results are secured and in others most enlightening results. The most informing plots are those on an orchard taken in hand after the profitable bearing age seemed to have passed. Various sections were planted to alfalfa, mulched with straw, hay, shavings, etc.

Another test is being made by Mr. Chase on his Corona orchard where trees are basined and irrigated regularly but a cover crop of weeds allowed the year around.

Final report is not made on either of these experiments. We note, however, that the United States department of agriculture believes that the serious consideration by citrus growers in that state of the mulched basin system is now justified. The department reports: Under this method low dikes are thrown up to form large, shallow irrigation basins near each tree and each basin is heavily mulched with alfalfa hay, bean straw, manure, or some other organic material. The object of this is primarily to prevent loss from mottled leaf—a disease which in its advanced stages markedly reduces the yield and quality of orange and lemon trees in California. This disease was found frequently associated with a low humus content in the soil, but there is also evidence that inadequate irrigation may be partly responsible for it.

In Bulletin No. 499, a professional paper of the department of agriculture, the results of a series of experiments to determine the extent to which the mulched-basin system overcomes these difficulties are set forth. It was found, say the authors, that this system conserves soil moisture better than any other method of soil treatment. None of the basin trees on either light or heavy soils wilted. The mulched-basin was also found to supply organic matter to soils badly in need of it more quickly than the use of mulches with furrow irrigation.

The experiments were also extended to include tests of different materials for the mulches. From these tests it appears probable that alfalfa and bean straw are of approximately equal value, while manure ranks next. Other legumes were much less beneficial. The yield where pine shavings were employed as a mulch was the lowest of all. As these shavings effectively protected the basins from evaporation, it is evident that the beneficial action of the other mulching material comes from the organic products which are carried into the soil from the mulch with the irrigation water.

For a basin with an area of 150 square feet, approximately 150 pounds of alfalfa, or 15 to 20 cubic feet of stable manure will be required each year to maintain an effective mulch. The material for the mulch, under ordinary circumstances, can not be grown between the basins because the amount of irrigation water available is not likely to be sufficient to supply cover crops without causing trees to wilt. For this reason the cost of the mulching material may seem in some cases prohibitive, but it must be remembered that the humus content of many citrus groves has been reduced to an extent that imperatively demands some means of restoration.

Estimate of Olive Crop

THE Fig and Olive Journal has canvassed the olive situation and estimates that for the state there will be between 60 and 75 per cent of a full crop. This estimate was made too early for positive figures, however.

Mission olives are quite light in some localities, one or two districts reporting only about 40 per cent of a full crop. This is the situation near Los Angeles. Manzanillos, on the contrary, seem to have set heavily, and the prospective crop of this variety is large.

From the Lindsay district comes the report that the olive crop there promises from 50 to 60 per cent of a normally full production. Missions and Manzanillos appear to be set in about equal quantity. Infertile bloom is given as the cause of the smaller crop in prospect in this section. The younger trees, those ranging from five to eight years old, seem to carry a larger proportionate crop than do the older trees. Hot weather in this district is not considered a factor in the setting of the crop.

Advices from Fallbrook in San Diego County are to the effect that it is yet too early to properly gauge the crop, but indications are that the yield will be much larger than last season.

Sacramento County, which is given a percentage of 115 by the horticultural commission, will have considerably less than this. A "fair" crop is our advice from this district, coupled with the statement that there was a very heavy fall of the bloom last month in many groves. As is usual, some groves show much larger crops than others.

In this section the hot weather is said to have caused "considerable" damage to olives, and in one district, at least, the expectation is for but 50 per cent of a crop, as a result of the hot wave. In this particular locality the heat seemed to affect Missions more than it did Manzanillos.

Our informant in Santa Barbara County tells us that there was very little dropping of olives in this section; though the weather during part of June was quite warm. The orchards visited by the writer showed stands that were "quite good." The prospective crop in Santa Barbara County is further described as "fair."

We are advised from the Hemet district in Riverside County that the trees examined show a light setting of fruit, this applying to Missions and Manzanillos equally. To tree conditions, rather than to the hot weather, is ascribed the light crop in this district.

From olive sections in the southern part of San Diego County we hear that the crop prospects are good. In fact, if all the olives mature that were on the trees at the time the report was made, these districts will have from 90 to 95 per cent of a crop, it is said.

While the weather became very warm in the Corning section last month, we understand from our correspondent there that little damage

resulted to olives. Missions are reported to be set a little better than Sevillanos in the Corning district, with Manzanillos fairly well set. About 90 per cent of a full yield is expected here.

Horticultural Commissioner Earle Mills reports the olive crop in Butte County as affected considerably by the June heat, and the yield is expected to be light.

Last reports from Phoenix, Arizona, indicated a good olive crop in prospect. The trees bloomed very heavily in the Salt River Valley and a good setting of fruit followed.

INTENSIVE AND DEFENSIVE CULTURE

Written for California Cultivator
By A. R. Gould

IN a contemporary we recently read something concerning intensive nonsense and comparative statements that intensive agriculture means less land and more labor, equipment, money, fertilizer, and extensive agriculture means more land and less labor, equipment, money, fertilizer and seed. Those who have practiced intensive agriculture will know by this time that there is much to be said in favor of close cropping and that it takes no more equipment to cultivate a small plot than a large one. It takes very little more fertilizer and not much more seed, and by using a sprinkler system very little more water.

The writer has several plots as follows in his home garden, size 40 feet long by nine feet wide, cropped with lettuce, two rows between three rows of peas, four rows of turnips, three rows of peas with two rows of lettuce between, three rows of turnips, three rows of sea kale beet, two rows of beans, Golden Wax, four rows of carrots, two rows of beans, Dwarf, two rows of beets, four rows of turnips, four rows of carrots. Plot two, size 12 feet long by four feet wide, two rows of dwarf beans and eight plants of tomatoes, early variety, grown on single stem, staked. Plot three, nine feet long by four feet wide, one row strawberries, two rows lettuce. All these are thriving and are yielding, in fact recently we used a row of radish from plot No. 2. If we left larger spaces between these crops and used up more land we should have more weeds to destroy and would use up about the same amount of water and fertilizer on the larger area.

Other evidence in favor of intensive culture we find in a report on the work of the Vacant Lot Cultivation Society of London, England, which by the way was started by that big-hearted American, the late Joseph Fels, whose work toward freeing the land in England is now bearing fruit. The writer met him some few years ago and realized what a true type of American he was. The government has now recognized this vacant lot movement, and small wonder, as we find that "there will be 1,500,000 allotment holders at work in good time for this year's crop," and the secretary adds: "Based on present retail prices these men and women will produce approximately $75,000,000 worth of vegetables, sufficient to satisfy the need of 7,500,000 people." Now this is war gardening and real intensive culture on the back lot and every little helps and we must remember that these allotment holders are townsmen and practically unskilled in the arts of cultivating the soil, but being in touch with an organized society which employs a capable instructor, they gain in health and knowledge. Furthermore, Sir Arthur Yapp, food controller there, declared recently that the allotment holders of the country had saved the situation as far as food was concerned. There is no need for any building sites to remain idle as they can become of great use to the community, especially at this time. Make intensive culture your first line of defense.

PLACER OLIVES

"A big share of our olives are shipped to Los Angeles in lugs, are pickled down there and go to market as a Los Angeles product," says Farm Adviser Amundsen. "Our olives are of good flavor and should be marketed as Placer County olives. Why cannot all our olive-growers cooperate and have the entire output pickled within the county. The cannery at Lincoln could install the necessary equipment for commercial pickling and oil-making. We would like to arrange a meeting of all the olive-growers to discuss the situation and make plans. It will mean more money to the growers, greater development of the fruit growers' cannery; and another industrial activity added to the county."

APPLY THE WORK-OR-FIGHT POLICY TO FARM MACHINERY

The work-or-fight policy should be applied to farm machinery as well as to men. Though machines can not fight they can be put to work on many occasions instead of standing idle in the barn lot. Most farm machines and implements are capable of doing much more work than they usually do, and the more they are used the less man labor will be required on the farm.

No man is rich enough to eat what his country needs.

HORTICULTURIST COMES TO UNIVERSITY OF CALIFORNIA

Dr. J. C. Whitten, professor of horticulture at the University of Missouri, has accepted the post of head of the division of pomology in the agricultural college of the University of California. Dr. Whitten, long recognized in the agricultural universities throughout the United States as one of America's leading horticultural educators, brings to California the benefit of his many years of study both here and abroad.

Somewhere on almost every farm there is a collection of discarded machinery and odd pieces of scrap iron. This scrap can contribute to the winning of the war by being converted into war material or new farm machinery. All this discarded machinery should be melted an incorporated in new castings. The aggregate scrap on American farms is enormous. The gathering up of it will help supply needed material, improve the appearance of the farms and yield profitable returns.

DOUBLE YOUR ACRES BY PLOWING DEEPER

Dry Land Plowing

The Proof of the Crop is in the Plowing

Mr. J. E. Plaskett at Yuba City, California, last year plowed a 300-acre adobe field, during the autumn while the ground was hard and dry. He plowed eight inches deep, turning up adobe and heavy sandy loam mixed; leaving it for the air and rain to disintegrate during the winter.

The rains came before he finished plowing, leaving five acres in the center to be plowed in the spring. When the barley crop was harvested there were 25 sacks to the acre on all but the five acres in the center; these averaged only 15 sacks.

Mr. Plaskett says it took him 40 years to find out that plowing the land when hard and dry, and plowing it deep, is the secret of good crops.

The bean and seed growers of Ventura and Santa Clara counties also plow when the soil is dry and hard, turning it up in big lumps for the air and rain to dissolve. Deep plowing opens the ground so the air and rain can get to it to air-slack, and mulch it.

The length of the season for plowing after the rain is too short—it is better to utilize the longer time in the fall after the crops are off. By dry plowing you avoid the possibility of the "plow-pan" or "water-pan"—for there is an uneven surface left at the bottom of the furrow.

Deep Plowing

It is Practicable with a Tractor

The Yuba Ball Tread Tractor is the ideal machine for deep plowing. The power generated by the engine is mostly delivered at the draw-bar.

It glides on steel balls—there is little friction. It is so perfectly constructed, of such serviceable materials, that the stoppages and loss of time to "fix" the machine are almost nil.

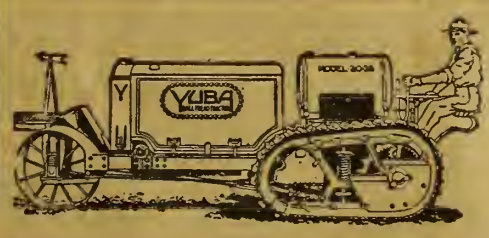
The Yuba is the tractor of rolling contacts. It has few sliding surfaces. It has roller-bearing transmission, ball-bearing swing circle and the ball tread.

The ball tread runs on two series of enlarged ball bearings—there are no rubbing surfaces to grind and wear.

The Yuba Ball Tread Tractor extracts from a gallon of distillate either an extra furrow, or an inch or two more depth in plowing.

It is mechanically perfect; so sturdily built that stoppages are few. Economy in your production requires a Yuba on the job. The government requires food, more food, and you demand power, more power to produce it—that's when you need the Yuba.

Have you the Yuba catalogue?



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We are equipped to make immediate shipment. Send for illustrated booklet; also price list and samples.

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Shipped in Bulk
Ground and Unground
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This is in fine mechanical condition, and on account of its large Phosphoric and Potash content, is a very suitable fertilizer for this season of the year.
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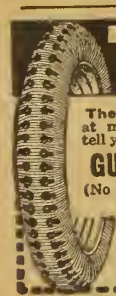
CORN HARVESTER Self Gathering for cutting Corn, Cane and Kaffir Corn. Cuts and throws in piles on harvester. Man and horse cuts and shocks equal to a Corn Binder. Sold in every state. Price only $25 with fodder binder. The only self gathering corn harvester on the market that is giving universal satisfaction.—Dexter L. Woodward, Sandy Creek, N. Y. writes: "3 years ago I purchased your Corn Harvester. Would not take 4 times the price of the machine if I could not get another one." Clarence F. Huggins, Speermore, Okla. "Works 5 times better than I expected. Saved $40 in labor this fall." Roy Apple, Farmersville, Ohio: "I have used a corn shocker, corn binder and 2 rowed machines, but your machine beats them all and takes less twine of any machine I have ever used." John F. Haag, Mayfield, Oklahoma. "Your harvester gave good satisfaction while using filling our Silo." K. F. Ruegnitz, Otis, Colo. "Just received a letter from my father saying he received the corn binder and he is cutting corn and cane now. Says it works fine and that I can sell lots of them next year." Write for free catalog showing picture of harvester at work and testimonials.
PROCESS MFG. CO., Salina, Kansas.



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Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Corn Not Filling

My corn did not fill well this year. I dusted with arsenate of lead to keep out corn ear worm. Would that affect the pollination? Also I noticed diabrotica on the green silks. Would it be possible for them to have eaten enough of the silks to prevent fertilizing?—Subscriber.

Without question over heavy powdering with any substance might prevent proper pollination. One reason for failure of corn crop in interior hotter valleys is the fact that when the corn is "silking out" extreme heat may destroy the silks so that pollination is impossible. If the dusting is very lightly done with a bellows or even through the meshes of some sheer cloth before the silking and then still more lightly some time after silk has appeared, it is probable there would be no injury from the powder. Bear in mind that while there are estimated to be 20,000,000 pollen grains on one tassel one of the grains must fall upon the receptive silks of which there are 500 to 1000 to the ear. As soon as the silk emerges from the husk it is ready to receive the pollen. If, at this critical period, the ear is covered with arsenate or any other substance pollination would be prevented. It may possibly be that the plant louse, or common aphis which has been so seriously infesting corn this year, prevents pollination, this because of sucking the sap from the silk and preventing it performing its functions. Of course any insect destruction of the silk would have equally disastrous results. These insects may possibly be reached by the earlier dusting recommended.

Aphis on Corn

Garden corn is seriously infested with aphis. Is it possible to control it economically?—Subscriber.

Aphis is easily killed, strong soapsuds being sufficient. Use one pound whale oil soap to six or eight gallons of water. A little kerosene added, if thoroughly mixed, increases the efficiency. Apply with hand spray pump directly on worst infestations. However aphis increases so fast that another spraying will probably be necessary within a few days. If preferred, nicotine sulphate, 40 per cent strength, one pound to 100 gallons of water, may be used as spray.

Kentucky Wonders Mildewing

Kentucky Wonder beans planted in adobe soil are mildewing badly, do not grow, blossoming very feebly and setting few pods. Beans were grown on this same ground for the two preceding years and were husky bearers till frost.—Subscriber, Los Angeles.

Mildew has been very general this year; the weather has been exceptionally favorable to its development and not favorable to control by the use of sulphur. Dry flowers of sulphur scattered over beans, grape vines, or any crop which is seriously affected, if given a few hot days, will usually cause a condition which prevents development.

Speed of Airplanes

Please tell me what the maximum and minimum speed of an airplane is. —Subscriber, Tulare.

This is a question on which we can get no very definite information. The recent issue of the World Almanac gives the maximum record secured last year as about 110 miles per hour. Accounts of the work of the new Liberty Motor assert that it will guarantee a speed of practically 144 miles per hour. As to minimum speed we are able to find no record. In fact, the speed varies so much according to weight of the machine, air currents and other factors that these conditions would have to be known in order to give a definite answer. However, we know of one machine which it was asserted required a speed of 70 miles before it would lift itself from the ground.

"Plugging Trees"

I notice on page 413 in your issue of October 29, 1914, "Easy Scale Killer Again." As the many human infections have come under the science of toxicology with gratifying results, why should not the same apply to our groves? I would be pleased to know if the treatment has been followed up to ascertain if the results have been satisfactory. If this cyanide treatment did the work then, as stated, there should be no question at this time of its success or failure, as it would be within the reach of the smallest as well as the larger ranchers. This seemed to have been under investigation by the Stanford University on September 3 of that year.—Subscriber.

The article referred to was a reprint of a communication from Professor Fernando Sanford of Stanford University to "Science", an Eastern scientific publication. We have seen nothing more regarding it in the public press and only a few months ago saw Prof. Sanford. Prof. Sanford remarked that nothing further had been accomplished along this line. As a rule orchardists do not believe it is possible to accomplish anything by this process. In a word, Prof. Sanford's plan, which, we may add, was at one time attractive in the minds of some, was to bore a hole to the heart of the tree, fill with cyanide or other toxic substance, plug up the hole and allow absorption by the sap of the tree. This poisoned sap was supposed then to cause death of any insect securing sustenance from the tree. Prof. Sanford referred to having tried this method on a Spanish broom infested with cottony cushion scale. He reported: "In February this year when the broom was thickly covered with scale I bored a three-eighths inch hole into the trunk to a depth of three inches, filled hole nearly full with crystals of potassic cyanide and plugged up. In two days the scale began to fall from the tree and in a few days all appeared dead."

Gophers

What is the best way to get rid of pocket gophers? Have tried several times with poison without much effect. — Subscriber, Ruth, Trinity County.

There is an article on another page of this issue showing the method of one of the Cultivator subscribers, that is, the use of gas from the exhaust of an automobile. That method has been found satisfactory by some. To our notion the best method is the trap, but there are traps and traps. Some prefer the box trap; for us, we prefer the old-fashioned one made of wire, a loop coming over the top with two prongs which when released pin the gohper against this loop. But whatever trap is chosen, be sure it is of good steel and has strength to hold and kill the gopher. Where poison is used, whether it be in raisins, potatoes or apples, we think best results are secured by inserting far into the runway and then closing the opening.

Dodder in Alfalfa

Please tell me how to eradicate so-called love weed in alfalfa. Will one lone string of this weed start new growth? Will winter kill it? Will it eventually kill field of alfalfa if left to grow?—Subscriber, Fresno.

Love weed, or dodder, is a serious pest, one of its worst features being that its seed is much like that of ordinary alfalfa, though smaller, so that a field that is entirely free from it may have it introduced. Therefore the first step is to secure seed absolutely free from it. The seed germinates in the soil and the slender yellowish vine grows and soon attaches itself to the growing alfalfa. Its connection with the ground is then severed, and from its first stalk it spreads to others until the one vine may cover a large spot or patch in the field. If the field is very generally infested it may be best to plow and raise hoed or cultivated crops until the seed of the pest has been entirely eradicated. If only in occasional spots, mowing with scythe and allowing the hay to become very dry, then sprinkling with kerosene and burning may eradicate the pest. If it begins growing again in a short time it may be controlled by the use of the blow torch, similar to, but usually larger than, that employed by the tinner in heating his iron. One should use care in mowing and hauling hay which is infested with dodder, for it is spread to other sections readily in this way. Even animals tramping through infested fields carry it from place to place. Do not use manure from horses fed infested hay on alfalfa field. It is probable that the "one long string" would not become attached to the alfalfa plant, but it might drop seed which would spread another infestation. There is no relief to be had from any winter killing, for the seeds perpetuate the species, in fact, the pest is even worse in some Eastern alfalfa sections than in California.

Quince Dropping

Would like to know why my quince tree leafs out nicely and sets fruit, but after the fruit is the size of a walnut it drops off. The tender branches turn yellow and the edges of the leaves turn brown.—Subscriber, Lemon Grove.

There is evidently something wrong with the root system. The trees will do well during the favorable season of the year but after that a weak or injured root system does not supply the needed nourishment. This is a theory based on the fact that injury to the root system is invariably shown in the top or ends of the branches of the plant first. If you had given some local conditions it is possible a different explanation would be given.—J. W. M.

Why Don't They Stop the Candy?

We read with lengthening faces your story of sugar situation and weigh out the daily dole in obedience to our country's mandate. But do tell us, if you know, why don't they stop the candy? Surely the candy habit is useless and generally undermining to body and mind. Why not save for necessary food in regular meals the sugar that goes into candy? I have with me one who has already lost a hand (in the Mexican troubles) and who declares he would cheerfully face the common foe again to finish in earth or air, but when he has to eat

his mush without sugar to sustain the body fires through his long day in the fields he growls that the thought of the foolish candy gets his goat.—Subscriber, Freestone.

Red Ants

Would like to know a way to get rid of red ants. Our cupboard is full of them.—Subscriber, Watsonville.

Insect powder or almost any of the ant exterminators that are on the market will drive them out of the house, but to prevent them coming back you must find the ant hills outside and destroy the whole brood. This can be done by pouring plenty of boiling water on the ant hill or punch several holes in the hill and pour half an ounce of bisulphide of carbon in each hole and cover it up tight with paper. This will smother them out. Keep fire away from the carbon bisulphide for it is combustible.—W. P.

Farm Tractors Gaining in Popularity

EVIDENCE of the growing popularity of tractors on farms is shown by reports made by more than 600 tractor owners in the corn belt, nine out of every ten reporting their investment in a tractor had proved profitable. These data were obtained in the summer and fall of 1907 and in the spring of 1918 on representative Illinois farms by specialists of the United States department of agriculture in order to determine just what conditions justified the purchase of a tractor in that section. Experienced tractor owners who made reports stated that tractors will prove profitable on most corn belt farms of 180 acres or more, while in their opinion they should not be expected to do so on farms of much less than 130 acres. The report of the investigators, published as Farmers' Bulletin 963, states that while the figures were obtained in only one state, they are applicable throughout the corn belt and that the prospective tractor purchaser may reasonably count upon equaling the average performances reported in the study.

The Tractor's Principal Advantages

Nearly three-fourths (71 per cent) of those who reported owned tractors capable of pulling three plows. Eleven per cent recommended two-plow machines, while 13 per cent advocated the use of four plows. In answer to the question "What do you find to be the principal advantages of a tractor for farm work?" the answers indicated that its ability to do heavy work and do it quickly, thus covering the desired acreage within the proper season, was considered the principal advantage. The saving of man power and the doing away with hired help, enabling a man to farm a larger acreage and thus increase the crops he can raise, was next in importance. The ability to plow to a good depth, especially in hot weather, was also emphasized.

Under disadvantages the difficulty of efficient operation was the principal point, and this fact should be kept in mind by everyone who considers the purchase of a tractor. In this connection tractor owners should take a course of training under competent instructors in this line, as the results of such a course usually amply justify the time and expense involved. Packing of the ground when damp was mentioned by several owners as a disadvantage, but not as frequently as was the case when more of the older and heavier machines were in use. The expense, delays, and inability to use the tractor for many kinds of work for which horses could be used were disadvantages mentioned by several owners.

Profiteering

What is profiteering?

Making unreasonable profits by unfair trade practices.

Has profiteering been abolished?

In many food lines it has been eliminated even in the face of actual shortage.

What has the United States Food Administration done to curb profiteering?

It has issued licenses to retail dealers in foods doing a business of $100,000 or more a year, and all wholesalers dealing in licensed commodities.

How does this check profiteering?

If the dealer does not follow instructions he loses his license and must stop his business.

Does this mean that wholesalers are under direct government control?

Yes.

Is the small retailer under government control?

No. He is under indirect control.

In what way?

If he charges profiteering prices he gets no more supplies from the wholesaler who is under direct control.

What has been the effect of this indirect control?

It has kept prices from soaring.

What rules help particularly to eliminate profiteering?

The rule which forbids the resale of food commodities within the same trade, without reasonable justification, and the rule prohibiting more than normal profits.

Stabilizing the Alfalfa Market

J. L. Farrar is continuing his work or organizing the alfalfa growers of the state and is now working in the San Joaquin Valley. One thing Mr. Farrar is doing is to inform growers as to what the association is not. At Fresno he said:

"The object of the association will be as much to protect the consumer from $35 hay as to protect the grower from $15 hay. The price approached $35 last winter when there was no regulation. The hay has also sold for $15 or lower in the field, sometimes less than it cost to produce, where the grower has not been protected with the right information, and where he has not had the money to hold and to bale with. Such cases are found in Fresno County. Again, individual growers have asked $25 for hay in the field, while the local associations have never asked more than $18 to $20 this year.

"In some sections of Fresno County investigated yesterday, it was found the cost of a ton of stacked alfalfa under present conditions was $13. This price does not include $3.50 for baling and $3 for freight, which would be required to lay it down in the cities.

THE SOLDIER'S CHANCES

Great as the danger and large as the losses in the aggregate, the individual soldier has plenty of chances of coming out of the war unscathed, or at least not badly injured.

Based on the mortality statistics of the allied armies, a soldier's chances are as follows:

Twenty-nine chances of coming home to one chance of being killed.

Forty-nine chances of recovering from wounds to one chance of dying from them.

One chance in 500 of losing a limb.

Will live five years longer because of physical training, is freer from disease in the army than in civil life, and has better medical care at the front than at home.

In other wars from 10 to 15 men died from disease to one from bullets; in this war one man dies from disease to every ten from bullets.

For those of our fighting men who do not escape scatheless, the government under the soldier and sailor insurance law gives protection to the wounded and their dependents and to the families and dependents of those who make the supreme sacrifice for their country.

VALUE OF ONE TON OF GARBAGE

Studies of garbage utilization by the food administration show that waste food products from American tables and kitchens are by no means worthless. On the contrary, garbage properly handled is a source of many useful and valuable products.

One ton of average garbage will yield sufficient fertilizing elements to replace the nitrogen and potash removed from the soil by eight bushels of wheat. It contains sufficient "fatty acid" for the manufacture of 100 12-ounce cakes of soap or for the explosive charge, as nitroglycerine, of 14 75 millimeter shells. When fed to hogs under suitable conditions a ton of garbage will produce 100 pounds of good, firm, first quality pork.

DAVENPORT'S
Riding Bean Harvester

Our Davenport Two-row Riding Bean Harvester or Sled is the ideal tool for harvesting bean crops planted between tree rows. It is strongly braced, well constructed with two long steel blades, cuts and windrows two rows at a time.

L. M. Davenport Co.
Manufacturers and Jobbers
Farming Machinery
110-112 North Los Angels St., Los Angeles, Cal.

WITTE
Kero-Oil Engines

Twice the Power at Half the Cost
Sizes 2 to 30 H-P.--Select Your Own Terms--Direct-from-Factory prices. Write your own order--Save $15 to $200. Prompt Shipment. Big new catalog, "How to Judge Engines" FREE--by return mail, Postpaid.
Write Today,
WITTE ENGINE WORKS
3100 Oakland Ave., Kansas City, Mo.
3100 Empire Bldg., Pittsburgh, Pa.
Money Back if not satisfied on my New 90 Day Engine Offer

The International 8-16
A Handy Tractor

A FEW minutes in the seat of an **International 8-16** gives you a new idea of the ease and comfort of doing farm work with a kerosene tractor. All the controls are right at hand—spark and throttle controls just under the steering wheel; clutch and brake operated by foot pedals; speed changing levers just where your hand falls on them—everything as handy as on an automobile.

International 8-16 has one reverse and three forward speeds: 1¾ and 2½ miles per hour for plowing, disking and other field work, and 4 miles per hour for road work and when traveling from one job to another.

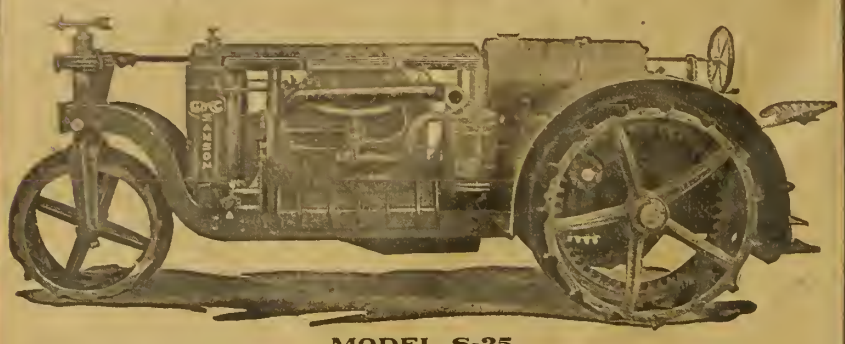
You will like this tractor when you see it. When you run it you will like it better. When you find out how light your bills are for kerosene and for general upkeep you will like it best of all. Go to the dealer soon and see it or write us for information because it looks as though the demand for **International 8-16** tractors is going to be much heavier than we expected and we shall have to fill orders in their turn.

International Harvester Company of America
(Incorporated)
Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

Avery Tractor
PRICE $695 F. O. B. Los Angeles
Immediate deliveries. Also built in six larger sizes. A Tractor for any size ranch. Good territory open to live agents. This is a money-maker.
Write for Illustrated Avery Catalogue.
Note our new location.
C. S. ANTHONY SOUTHERN CALIFORNIA DISTRIBUTOR
164-168 North Los Angeles Street, Los Angeles, Cal.
Telephones: Broadway 952, F2533.

YOUR PROBLEM IS SOLVED

When You Buy a



MODEL S-25

SAMSON SIEVE-GRIP TRACTOR

GMC TRACTORS GMC TRACTORS

10 H P on the Draw Bar—25 H P on the Pulley

The Samson Sieve-Grip Tractor embodies all the features which years of painstaking effort and experience have approved. It is not an experiment. It is a demonstrated success of years' standing. Its enthusiastic owners are numbered among nearly all civilized nations on the globe.

In construction, it is very simple. In strength, all that its name implies. Built to meet the most exacting demands, day in and day out.

Its Sieve-Grip Wheels, skeleton-like in construction, give greatest traction with least weight. They do not slip. They do not pack the soil. They assist cultivation.

Its Nodust Moisto-Rizer cleanses all air entering carburetor and crank case vent. All working parts of the motor are protected from dust and grit.

Its Lubricated Roller Pinions reduce friction to a minimum. They deliver maximum power to the draw bar.

Its ball and disc type Governor assures simplicity of operation and prevents racing of the motor. Adjustment, made from the driver's seat, secures any desired set speed regardless of load, to the tractor's maximum capacity.

We court the most rigid investigation.

It will be our pleasure to give you a demonstration at any time, without obligation on your part.

Ask an owner or write us for information.

Samson Sieve-Grip Tractor Company

DIVISION OF

General Motors Corporation

STOCKTON, CALIFORNIA

ZEROLENE

The Standard Oil for Motor Cars

The Popular Motor Oil

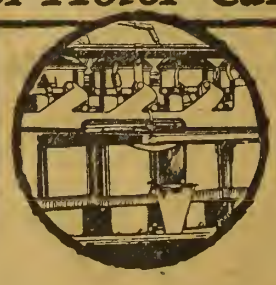
More ZEROLENE is used for automobiles on the Pacific Coast than all other oils combined.

Leading motor car distributors praise ZEROLENE, correctly refined from selected California asphalt-base crude, because it maintains its lubricating body at cylinder heat and gives perfect lubrication with less wear and less carbon deposit. Get our lubrication chart showing the correct consistency for your car.

At dealers everywhere and Standard Oil Service Stations

STANDARD OIL COMPANY

(California)



Engines are either water-cooled or air-cooled. This, the air-cooled type, like all *internal combustion engines*, requires an oil that holds its full lubricating qualities at cylinder heat, burns clean in the combustion chambers and goes out with exhaust. ZEROLENE fills these requirements perfectly. *because it is correctly refined from selected California asphalt-base crude.*

Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY
IT MAKES THEM FAT

Hauser Packing Co. Los Angeles

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Northern California Notes

Written for California Cultivator by W. S. Guilford

THERE is promise of a big tonnage of rice in the Sacramento Valley this year. This is almost clear gain to the food supply of the nation as compared to conditions which obtained before the rice growing was started. Most of the land on which rice is now being planted was used only for pasture and rented for from 25 cents to 50 cents per acre. Now it is producing from 25 to 80 and 90 sacks of rice per acre.

There has been some difficulty in water delivery, as there always is on any irrigation system, but taken as a whole the rice crop looks fine.

Water grass and other weeds are in evidence everywhere but these are being taken out to the extent that labor is available for this work. The Mexican labor importation is to be used on this work.

Much attention is being given to the growing of the early maturing varieties of rice. A considerable part of the acreage is planted to these this year and it will be increased in 1919.

Labor Affairs

Good work is being done by the state council of defense labor bureau of which Alden Anderson is chairman and J. P. Dargitz special representative. A movement is on foot to bring in a considerable number of Mexicans for work in the rice and fruit harvest.

The Woman's Land Army is doing very effective and satisfactory work in the fruit harvest.

An effort is being made to have a standard wage set for common farm labor and the various classes of skilled farm labor. This will be a big benefit in that it should prevent the movement of laborers from one section to another because of rumors of higher wages being paid. It is proposed that this wage scale be set at prices which will be fair both to employes and employer.

By-Product Prices

There is big demand for grain straw and grain stubble and high prices are being paid. A common price for barley and wheat stubble is $1.00 per acre, and prices of $2.00 and $3.00 are being asked.

It is reported that rice stubble has been contracted at $2.50 per acre without the straw which will be sold separately.

Saving Straw

A movement to conserve grain and rice straw is being taken up by the Glenn County council of defense and the state council of defense. W. D. de Egilbert of Willows is in charge of the work. Cooperation between the grower, the baler and the stockmen who will feed the straw is being arranged.

The Iron Canyon Project

The great need of the Iron Canyon project for conserving flood waters at the head of the Sacramento Valley for use in growing crops is more manifest this year than for some time. All of the land that is not being irrigated is dry, very dry. The production on thousands of acres of good land could be multiplied by the use of the water which now goes to waste.

An Addition for Orland

A new reservoir to store more of the run-off of Stony Creek is being discussed as a war measure. An addition of 20,000 to 40,000 acres to the Orland project, which additional storage could provide for, would make a big increase in crops in that section. The Orland project is recognized by many authorities as the most successful in America.

Red Spider

The ravages of red spider increase as the season progresses. Many trees have already been defoliated, and in other orchards it is kept in check only by continuous spraying. If spraying is delayed for a couple of weeks it gets such a start that it is difficult to control it. One of the best investments in our prune orchards this year is atomic sulphur and the spraying crew.

Farm Bookkeeping

The income tax has made farm bookkeeping a greater necessity than ever before. Many farmers, the majority in fact, have been content to have the income exceed the expenses and let it go at that. Now the income tax inspector finds it easy to ascertain the amount of money received for crops, and it is up to the producer to show what it cost to grow them. And to do this it is absolutely necessary to have some kind of books to show. In Glenn County one expert bookkeeper who has made a careful study of the income tax finds a greater demand for his services for keeping farm books than he is able to supply. He is a "common sense" kind of bookkeeping, who lays out a simple system, and in a few hours time every month is able to do everything necessary in the way of posting, etc.

Dry Trees

Many trees show the effect of drouth as to be expected after two very dry years. In fact some trees show it even where they are being watered frequently. This is particularly true where the soil is heavy. Frequent light waterings—where the moisture dries up rapidly — do not penetrate the soil to sufficient depth to do much good. There was a case in point here not long ago. A tree was drying up at the top and showed in every way that something serious was wrong with it. And this in spite of the fact that it was being watered from a city water system frequently. The owner was afraid something was working at the roots of the tree, some mysterious bug or germ that would have to be dug out. An examination showed that the water has been penetrating only a foot or so into the soil and that a large percentage of the tree's roots were in "powder dry" soil. The condition was remedied by making deep trenches in circles around the tree and letting a small stream of water run in them for many days until the soil was thoroughly saturated to a depth of four or five feet.

FRESNO FAIR

Secretary and Manager C. G. Eberhart is mailing copies of the premium list of the Fresno County Agricultural Fair. The fair will be held October 1-5. The Fresno fair grounds consists of 100 acres of land directly opposite the park and is connected by two car lines. The grounds are now well fitted with buildings which will be supplemented with large tents, and every effort is being made to provide entertainment as well as instruction for the usual large attendance.

Not "our bit" to the call, but our best and our all.

PROTECTION OF NEWLY PLACED CONCRETE

All newly placed concrete work must be protected against the elements and against injury from other outside causes until the concrete has thoroughly hardened. In most cases this protection need be no other than a covering of some sort which will prevent rain from falling directly on the exposed concrete surface.

In seasons of extreme heat it is necessary to protect the concrete against direct rays of the sun and direct exposure to the heat. Such exposure will cause the water in the concrete mixture to dry out before the concrete has had an opportunity to harden, and thus an inferior concrete will be produced, particularly at the surface. The best way to protect the concrete against such injury is to keep it covered with water until it has hardened. In the case of pavements or floors this is easily accomplished by building little dams of clay or other suitable material across the surface of the concrete and keeping the enclosed spaces filled with water for several days, or until complete hardening has been accomplished. In other cases where this method is not practicable the concrete may be protected by keeping the air in the room in which the concrete is located saturated with moisture either by means of escaping steam or a fine spray of water.

The presence of water or moisture in the atmosphere will not in any way injure the concrete either before it has hardened or after. Before hardening has set in the presence of moisture in the air is exceedingly beneficial to the complete and thorough hardening of the concrete. After the hardening has been accomplished the presence of moisture in the air will not affect it.

The application of paint or other protective coatings to concrete work before it has hardened will cause it serious injury. This injury arises from the fact that the hardening process will be materially retarded by the admixture of any substance not properly a part of the concrete mixture. The concrete at the surface will also be materially weakened by this application and in all probability will peel off after the concrete below the surface has hardened. After the hardening process has been completed no protective coatings of paint or other material are necessary.

PROTECT THE SCREECH OWL

A bird of which little is known, except by the initiated, yet one that is far from uncommon in most of the wooded sections of the United States, is the much maligned screech owl, says Boys' Life, the Boy Scouts' magazine for July. The sweeping manner in which the farmer and sportsman condemn it as well as all other birds of prey, because of the offenses of a few, aptly exemplifies the old adage that "a little knowledge is a dangerous thing." Did the farmer but know it, he is aiding in the extermination of one of his best friends when he kills, as he almost invariably will kill when he gets the opportunity, one of these little Raptores; for the screech owl not only does not help himself to the poultry but will rid the farm to a large extent of many of its enemies if he is allowed to make his home in the vicinity.

With the exception of the burrowing owl, it feeds more extensively on insects than any other species. It is also a diligent mouser. Of the 204 stomachs examined, birds were found in only about 15 per cent, and fully one-third of those were English sparrows. Among insects, grasshoppers, crickets, beetles, and cutworms are most often eaten. Meadow mice, white-footed mice, and house mice are the mammals most often taken, while chipmunks, wood rats, flying squirrels and moles are less frequently found. As nearly three-fourths of the owl's food consists of injurious mammals and insects and only about one-seventh of birds (a large proportion of which are English sparrows) this little owl should be carefully protected.

INTERNATIONAL SOIL PRODUCTS EXPOSITION

The International Soil Products Exposition will this year be held at Kansas City, Missouri, October 16-26. Exhibits will be shown from Canada and Mexico as well as from all parts of the United States. Live stock and dairy industries will be featured. This exposition will be the thirteenth annual.

June reports from Greece indicate that the currant crop will be heavy; old stock on hand amounts to 40,000 tons.

KILLING GOPHERS

Some years ago the Cultivator recommended as excellent destroyer of gophers and squirrels, the exhaust from the automobile. We do not think the value of this method has been fully appreciated. Now comes a Los Angeles County subscriber, E. M. Morgan, with a photo showing how he uses this method at nominal expense. The connecting hose which the boy is holding is simply an old bicycle tire cut and put over the exhaust. The exhaust is made more deadly by the use of cylinder oil, a quantity of which is squirted into the intake. As a matter of fact Mr. Morgan says the oil which he uses is the "worn out" oil which has been already used in the machine. In lieu of the bicycle tire any old hose my be used which will connect up the exhaust with the hole. Note the smoke arising from the ground to the left of the opening in which the tube has been inserted. This is evidence of the effect of this work.

Killing Gophers

Exhausting from auto through old bicycle tire finishes the gophers. Photo by E. N. Morgan.

Love blinds some men and it makes lots of others too near-sighted for military service.

RURAL FIRE CONTROL

The Agricultural Experiment Station, University of California, Berkeley, is mailing circular 202, "County Organization for Rural Fire Control." It is written by Woodbridge Metcalf. As justification for the publication the author referred to the fact that the loss of food stuffs in field and fire fighting last year in this state aggregated $750,000. There are from fifteen to twenty thousand acres annually destroyed within California boundaries. Besides that thousands of acres of range and tons of hay are annually lost by fire. The circular touches upon essentials of county organization, local fire companies, duties of fire chief, district fire plan, and fire fighting equipment, giving specifications for the building of a trailer and for all parts of the fire fighting equipment, then an outline of the equipment in the trailer. Then at some length instructions are given as to the use of fire extinguishers and other fire fighting equipment.

CITIES MUST HELP FARMERS

In any American city it may come to pass that men who know how to chop wood or pick cotton or harvest wheat will have to close their offices and stores during the periods of seasonal strain and come out and help the farmers. All the other countries at war have done that and we must do it if the need appears.—Clarence Ousley, Assistant Secretary of Agriculture.

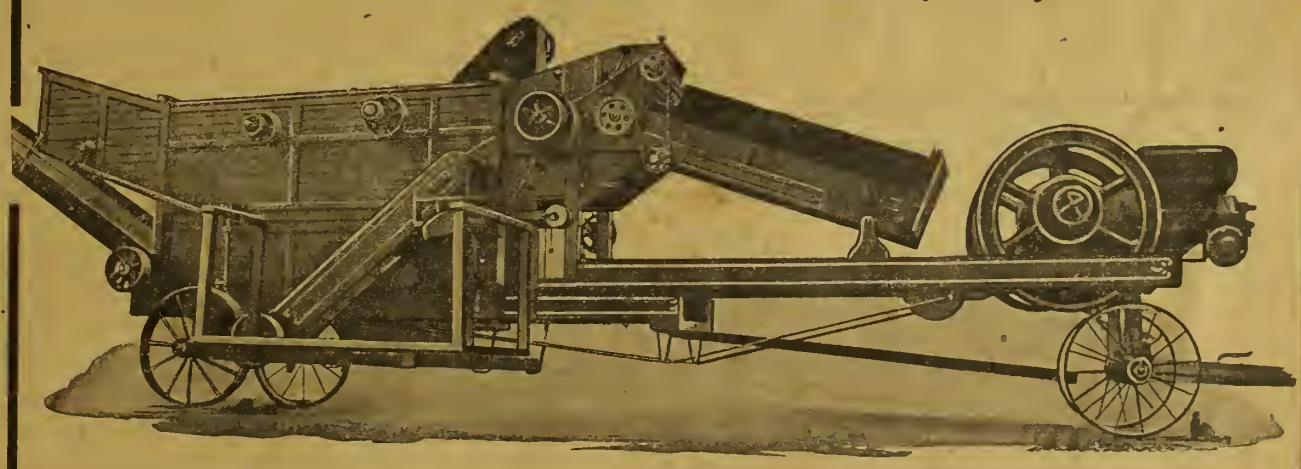
ALIENS

There are enemy aliens and there are native aliens. The American who does not do his part toward winning the war, who neither fights nor works nor lends for victory is as much an alien to America's purposes and America's cause as the rankest Prussian interned in this country.

This is a war of peoples as well as of nations, and each individual has a place and a duty.

New Labor Saving Bean Threshers

Seven men can operate the Junior No. 1, equipped with sacking platform for threshing from windrows—the most successful and economical Bean Thresher offered to California growers, threshing every variety.



For 22 years we have been making Bean Threshers in Ventura County.
Our experience in hundreds of bean fields with the many machines we have built and sold has given us unlimited opportunity to observe and build bean threshers that meet every requirement.

To meet the demand for a bean thresher that could be operated with a minimum of labor, we have produced the Junior Nos. 1 and 2, two sizes of our special models that can be drawn across the field by a small tractor or horse power and operated by gas engine mounted as shown here. This machine can be operated as a stationary machine also. Seven men can operate this machine successfully, thereby SAVING THE EXPENSE OF HAULING THE BEANS TO THE MACHINE. It is built on the same principles as our larger machines and works just as satisfactorily, threshing every variety of beans.

Write us for information about BEAN THRESHING MACHINERY, telling us your acreage, what kind of beans you have, what horsepower engine or tractor you have, what kind of engine and tractor, and the amount per day you would like to thresh and we will furnish you, free, information as to your most economical and satisfactory requirements. Do not waste a valuable bean crop by trying to thresh beans with a machine intended to do other work. It will pay you to investigate our line and to buy without depending upon freight shipments from the East and where parts can be obtained quickly.

The Ventura Manufacturing and Implement Co.
Ventura, Calif.

YOU can save from $6.00 to $12.00 in fattening each hog by feeding Globe A-1 Hog feed (10% dry buttermilk) and you can save from four to six weeks time. This is not laboratory theory, but actual results of feeding tests.

GROWING PIG FEED A1 FATTENING HOG FEED

More Hog for Less Money, and Quicker

Write today for a free copy of the "Fact Book" which gives details of these tests. A scientific and practical review of modern feeding methods, with usable, down-to-earth directions for keeping your production cost down to a minimum.

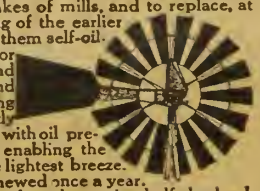
Fact Book HOG A-1 FEED

GLOBE MILLS
905 E. Third St., Los Angeles

The DRY BUTTERMILK DOES IT

THE SELF-OILING WINDMILL

has become so popular in its first three years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load



We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.

Write AERMOTOR CO., 2500 Twelfth St., Chicago

For Sale by
VAN-SHAW-PALMER CO.,
421 E Third St., Los Angeles.

Shorthorns

Bred for Range Purposes and of Pure Scotch Blood Lines.

Show Herd won highest honors in 1917.

Visitors welcome — information cheerfully given.

T. T. Miller

So. Normandie St., Los Angeles, Cal.

HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

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Field Notes from the Live Stock Men

The registered Shorthorn calf Red Cross Stamford given by Butte City Ranch for Red Cross and sold by the California Cattlemen's Association at their meeting at Davis June 27 made $4000. It is to be sold again at the state fair and again at the Los Angeles and San Francisco live stock shows. A great many pure bred animals are being sold for Red Cross. Fifty registered bulls are to be sold returns to go to the chapter in which the buyer lives.

The International at Chicago this year will recognize the work of herdsmen who fit the cattle for winning championships; heretofore the honor has gone to the breeder who will, under the new ruling, be deprived in no way of his honor, but the herdsman will receive due recognition.

The recent auction of Milier Poll Durhams in Indiana averaged $709. The topper was a bull calf, Ceremonious Sultan, $3100.

Southern Michigan farmers have organized the Citizens Agricultural Auxiliary which has adopted for its slogan: "Make this the greatest year in the history of southern Michigan."

The Canadian government is aiding in the breeding of better horses through purchase of high cost stallions which must be of satisfactory type and which are turned over to breeders for a nominal consideration.

The University of Indiana at Purdue announces that Prof. C. M. Vestal, recently of the University of California, will hereafter be connected with the Indiana institution.

Lighter weight hogs are finding favor with the packers.

Steers are now selling in Chicago at $16.50 to $17.50 and best Western wethers are commanding $14.00 to $14.25.

Illinois Veterinary Medical Association met in annual meeting at Urbana, July 9-11. A resolution was adopted calling for laws preventing use of stallions of faulty conformation.

The National Western Ram Sale will be held in Denver, Colorado, September 3-6.

The American Veterinary Medical Association meets in Philadelphia, August 19-23.

A disease among the cattle of eastern Colorado caused the cattle to become blind and unable to eat or drink.

The American Berkshire Association will offer $2000 in addition to the prizes offered by the National Swine Show.

Lord Rhondda (David A. Thomas), food controlier of Great Britain, and a noted Hereford breeder, died at his home in Monmouthshire, England, July 3, his death being due to overwork in the service of his country.

The Jersey Bulletin comments on the record made by the Ferndale Cow Testing Association of this state, referring to the fact that nine years is a long time in the history of cow testing associations. There were 64 herds tested last year.

The U. S. department of agriculture has begun an experiment to determine whether prepotency in production is the result of line breeding or outcrossing. It is expected that this experiment will occupy at least 25 years. Cattle of each of the common dairy breeds will be used and the first animal to be selected is the Guernsey bull, Barrington May King 19312, purchased from Sunnybrook Farm owned by Charles D. Cleveland, Eatontown, New Jersey.

The Wool Clip in California

AT A CONFERENCE of the government officials and representatives of prominent wool growers held at Washington, D. C. last April, it was agreed to place all the wool in the government's hands at a price prevailing July 30, 1918. The wool was to be handled through the usual licensed dealers, the latter transferring the same from the grower to the quartermaster general's department and being allowed a definite commission for their services.

A number of distributing centers were named. However, for some reason, Portland was the only western distributing center named.

On the other hand, special regulations have lately been made for handling the wool clip for California, as issued by Lewis Penwell, chief of wool division of war industries board, Washington, D. C.:

"There is a considerable saving in freight rates on baled wool over wool in bags and heretofore it has only been necessary to scour and carbonize many California wools. To do this it has been necessary in the past to have these wools assembled at various points in California, there to be blended and baled in the grease or else scoured, carbonized and shipped East for sale. After the wool has arrived at the Eastern center in the neighborhood of the mills, it is inspected by the representatives of the mills and purchased with reference to the particular needs of the mill.

The quartermaster general's department, which this year will be the buyer of practically all California wools, wishes to have them follow as nearly as possible the channels heretofore taken, and make its purchase after they have arrived at the Eastern centers of distribution where they can be inspected by the quartermaster general's department and the representatives of the mills, and be distributed with reference to the particular class of goods which is being manufactured by the mills. Accordingly for the foregoing reasons, there will be no approved distributing center established in California.

However, in order to leave wool enough in the state to amply take care of the needs of all the mills in the state, and in order to utilize the very efficient carbonizing and scouring plants of the state to their fuliest capacity and to give the growers having wools which should be carbonized an opportunity to dispose of their clips locally, should they desire to do so, dealers approved by the board will be permitted, under government regulations to buy California wools at a price sufficiently below the established government price to enable the dealer to make a net profit of not to exceed one cent per pound for buying and assembling these wools. This will be done in order to have them blended, baled, scoured, carbonized and baled for shipment, either to local mills or to approved Eastern distributing centers, and final sale to the government.

The price the government has fixed is on a basis of delivery at the Atlantic seaboard, and the grower will have to pay the freight to the Atlantic seaboard whether he consigns his wool or sells it. Therefore, the dealer in buying and in order to make a net profit of one cent per pound, will of course have to pay the grower the government price, less the one cent, less freight and baling expense, less the cost of scouring and carbonizing, —if it must be scoured and carbonized,—and less the estimated interest at the rate of six per cent on the investment until the wool arrives at the Atlantic seaboard.

The books of approved dealers shall be at all times open to government inspection, and if at the end of the season's business it is found that the net profits exceed one cent per pound on the season's business, then such excess profit shall be disposed of as the government decides.

No grower is required to sell unless he wishes to do so, and that at all times he has the privilege of consigning his wool to an approved dealer in an approved distributing center, at which point the wool will be appraised and purchased by the government, and the full government price paid the grower, with no deduction whatever for commissions or middlemen's profits.

Growers of small clips who desire to do so will be allowed to pool their clips in quantities of not less than minimum carloads and consign the wools so pooled as one account to any approved dealer in any approved distributing center. Growers who desire to consign their wool to San Francisco, Stockton, or other usual concentration points in California, may consign it to any approved dealer, whose commission shall be one-half cent per pound to be paid to the grower.

These regulations apply to California wool only. Wools from states to the East of California will be required to be shipped East.

Dealers wishing to operate under these special regulations should apply to the undersigned for a formal permit to operate."

Professor Robert F. Miller, sheep and wool specialist of the University Farm, Davis, has been appointed as California's representative in the wool division of the war industries board by the chief of the wool division, Lewis Penwell, Washington, D. C. and for any further information regarding the disposal of the present wool clip, growers should communicate with Professor Miller at Davis.

HOW TO PROTECT COWS FROM FLIES

It is questionable if it is worth while to spray cows to protect them from flies. The continued use of any spray gums up the skin until the animal suffers more from this than from the flies, unless she is washed once or twice each week. The amount of milk produced is not appreciably increased by spraying cows, but the greater comfort in milking may be sufficient to pay for the trouble. It is generally more convenient and more satisfactory to purchase some of the prepared fly repellents than to get a formula filled. C. H. Eckles of the University of Missouri college of agriculture mentions that two formulas that have been used with some success are:

Fish oil one gallon, oil of pine tar two ounces, oil of pennyroyal two ounces, kerosene one-half pint.

Fish oil one quart, petroleum one quart, carbolic acid one ounce.

These mixtures, like the ready mix-

ed ones, are applied most advantageously with a hand spray pump. The spray is generally applied once a day, just before milking in the evening. If flies cause sores on the udder, the repellent may be applied to them.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.
Unsigned communications receive no attention.

Lame Pigs

Would like to ask advice regarding my three months old pigs that are getting lame. It seems to be in the hind legs just below the hock. Am feeding them skim milk, bran and green alfalfa. What is the remedy?—Subscriber, Van Nuys.

It may be rheumatism. Get salicylate of soda and give each one half a teaspoon of it in the sour milk once a day for a week or two.

Grub in Head

I am raising 100 orphan lambs that are now over three months old. Have had no trouble with them until recently when they developed a cough and running at the nose, at first only a few of them, but now most of them are affected. Fed them milk for over two months and they have good range on bur clover and filaree. They are in a corral at night with access to a good warm shed. They have plenty of fresh water and salt. The corral is a little dusty now but the trouble started before the dust appeared. The discharge at the nose is quite thick.—Subscriber, Chino.

It may be grub in the head. Examine the head above the eyes and if you find some soft spots open them with the point of a knife and remove the grub. It may be due to lung worms, but is a little early in the season for that. If it is you may be able to detect some of the dead worms in the discharge from the nose. In that case turpentine is the best remedy. Give a teaspoon of the turpentine in four or five times as much linseed oil once a day for a week.

Mange

Would like to know a remedy for dog mange. Our pet dog is affected with it and we have tried dip and mange cure but nothing seems to help.—Subscriber, Watsonville.

Mange is due to a small mite that burrows in the skin. There are several good remedies for it such as sulphur ointment, a solution of chloride of zinc; one part of the zinc to 200 parts of water, or probably the best remedy is to apply a thin engine oil all over the dog. Repeat this in a few days and in another week wash him with plenty of soap and water.

Sore Eyes

I have a young mare that has trouble with her eyes every summer. The lids seem swollen and sore and water runs from the eyes. Can you tell me what the trouble is and what I shall do for it?—Subscriber, Shafter.

If she is running out in pasture it may be due to a weed that she comes in contact with. In that case it would only be necessary to keep her in and bathe the eyes with warm water that has a teaspoon of borax to the pint. Or it may be due to a disease called periodical opthalmia. In that case you would have to add to the above remedy an internal treatment. Give her once a day a handful of epsom salts and common salt, two parts of the epsom to one of the common salt. Continue this for a week.

Indigestion

Would like to have advice regarding a sick calf. The calf has lost its voice and when lying down the food runs out its nose. When bringing up its cud the food runs out its mouth as well.—Subscriber, Moorpark.

It is caused by indigestion or sour stomach. Get a pint of raw linseed oil and add two ounces of turpentine to it. Shake well and divide into five doses. Give one dose once a day. If it seems necessary repeat this in a week or two.

Rupture

I have a heifer calf eight weeks old and the navel seems to pouch down. Is it possible that this is a rupture, and what is the remedy?—Subscriber.

It may be a rupture and will probably disappear without help, but if it does not by the time it is six months old, then turn the calf on its back, scrub the parts clean and reduce the rupture, then pass a skewer through the sack and tie a cord around it. Be sure the skewer is clean by dipping it in a strong solution of carbolic acid. Feed the calf lightly for two weeks, and at the end of that time if the skewer has not dropped off remove it and wash the parts well with soap and water with some carbolic acid in it.

THE GERMAN DOCKS

The taking over by the United States of the title and possession of the docks, piers, wharves, and other shipping property on the Hudson River, owned by the German steamship companies, the North German Lloyd and the Hamburg corporations, is greeted with universal approval by the American people. The property is to be retained by the government and not turned back to its former owners at the close of the war.

Purchasers of Liberty Loan Bonds and War Savings Stamps, who supply the money used for this purpose, may feel especial gratification. These docks and piers and wharves are strategic points of great importance and value, and it is intolerable that they should remain in enemy hands, or that they should ever revert to German ownership. German commerce has been shown to have been so indissolubly bound up with, and so much a part of German militarism, that it is just and right that it should suffer all the penalties of war.

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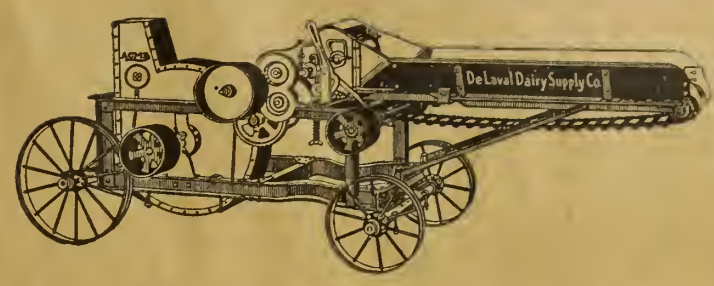

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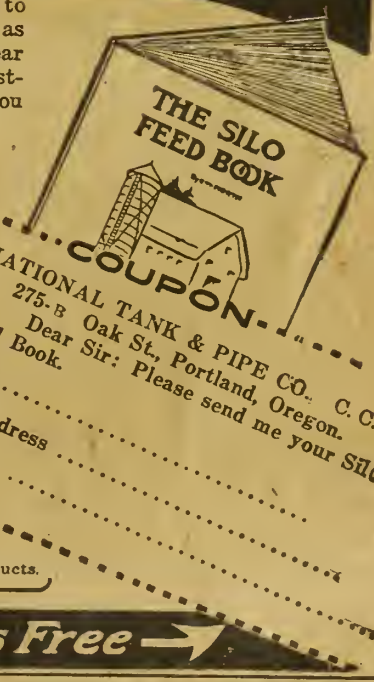
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Sugar Beet Tops and Lima Bean Straw Silage

By G. E. Bensel

SUGAR beet culture leaves, after the beet crop has been harvested, a by-product, the beet tops, which if properly siloed constitute an excellent feed for live stock. Considering an average yield of ten tons per acre, the weight of beet top ensilage produced per acre can be estimated at approximately three tons.

This valuable feed has not been sufficiently appreciated by our beet growers. The cost of siloing tops is comparatively slight, ranging under ordinary circumstances from $2.50 to $3.00 per ton. This cost includes the initial cost of excavating the silo, the value of the tops, straw and salt used, and the cost of hauling to the silo and filling.

By siloing the beet tops, they undergo chemical changes by which they are rendered more palatable and more digestible. A great deal of the feeding value of beet tops is lost by allowing them to lie scattered in the field where the stock is turned into them. The method of siloing used comes as near conserving all the value of the tops as it is at present possible to do. It allows little waste and softens the crowns so that the entire use of the tops is realized.

Chemical analysis of beet top silage shows that the necessary constituents for animal nutrition are present in about the same percentage as in corn silage and in other feeds. We recommend the pit silo where such is practical. The method of construction is very simple and inexpensive.

One ton of green beet tops requires about 48 cubic feet of silo capacity. The ends are left sloping, making excavation easy. The tops are firmly packed in the silo by driving through each time with the wagon, thus compacting all the lower layors.

The bottom should be covered with straw about six inches in depth and about the same depth is put over the top. The top is then covered with six inches of dirt which excludes air and moisture, thus keeping the tops in their original state of preservation.

The palatability is improved by scattering salt over six inch layer of tops. It is very important to compact the tops in order to secure the proper fermentation and breaking down process. The tops will settle about 30 per cent after one month of storage.

The best results are obtained by putting the tops in the silo promptly, not to exceed two days after they are topped. It is important to have the tops as free from dirt as possible and care should be taken in picking up the tops to shake off the dirt.

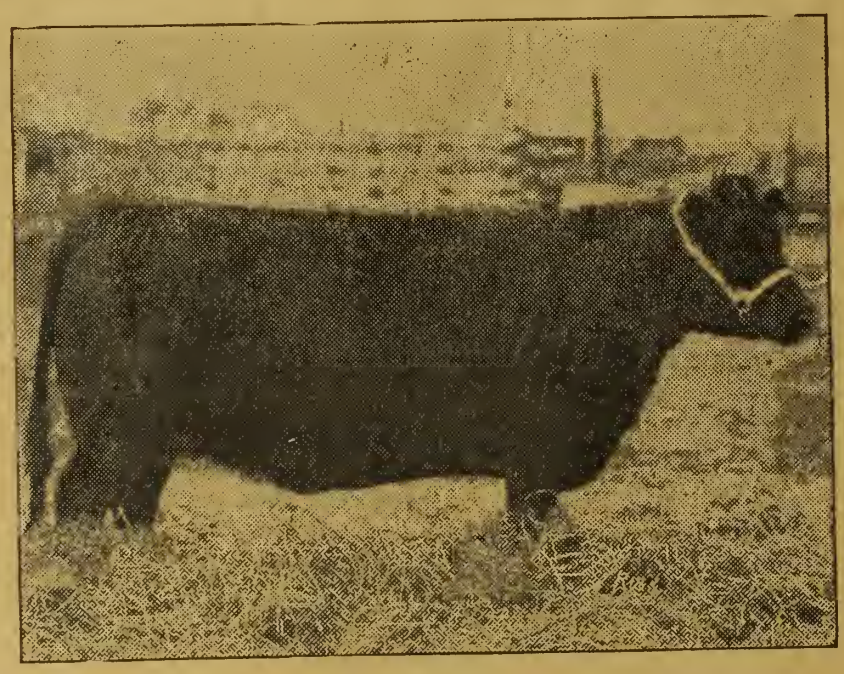
From four to six weeks are required before the silage is in good condition. During the process of fermentation the digestibility of the principal food constituents has increased in the ratio from 80 to 91. This means that 11 per cent more of the feeding elements will be assimilated by the animals during the feeding process as compared to the green tops. This is a very important feature because it is not the amount of feed but the portion the animal can digest, which is fattening.

In regard to the quantity of beet top ensilage to be fed to steers I would recommend about 30 pounds per head. Using this amount as a basis one acre of beet tops siloed, yielding three tons of tops per acre, will feed and fatten 1½ steers in 120 days.

In addition to the 30 pounds of beet top ensilage, in order to balance the ration, we should add about 20 pounds of bean straw and a small quantity of concentrated food, such as cotton seed meal, from two to four pounds per head per day.

Expressed in other words, each acre of sugar beets and each one and one-half of lima beans produce as a by-product, sufficient food to feed and fatten one and one-half steers in 120 days. The only feed the farmer has to purchase is from four to five sacks of concentrate in order to properly balance the ration.

I do not feel it necessary to make here a patriotic appeal, because judging from the way the farmers have responded to the third Liberty Loan, I am convinced that you fully realize your position and obligation in this great struggle for liberty. I simply wish to show the advantages to be derived by the better utilization of the by-products, beet tops and bean straw for feeding purposes; 10,000 acres of beet tops and 15,000 acres of bean straw will feed and fatten 15,000 steers and produce in the neighborhood of 3,000,000 pounds of beef, which is just another step toward successful and systematic farming.



A $4000 Aberdeen-Angus

Brookside Blackbird 36th was sold at the annual W. H. Cooper Aberdeen-Angus sale of J. Garett Tolan of Iowa.

CALIFORNIA SHEEP CLUBS

The agriculture clubs of California are assisting in curtailing one of the wastes in California agriculture. Each spring during the lambing season thousands of orphan and twin lambs are slaughtered because of the inability of the sheep men to care for this kind of stock.

Early in the spring of 1918 a number of boys in the Sacramento Valley were interested in the work of raising lambs on the bottle. High school lamb clubs were organized and given instruction in the care and feeding of this stock which is normally slaughtered and which, therefore, never reaches maturity. The proposition was presented to the boys as an opportunity for them to get started in the sheep business with practically no capital. The members of the various high school lamb clubs went to the shepherds of the larger flocks which were lambing along the foothills of the eastern side of Sacramento Valley and asked them not to slaughter the orphan lambs on certain days. On these specified mornings the boys would go by appointment to the flocks and take as many lambs as they felt they could adequately and properly take care of. These lambs were usually secured without cost to the boys, since this stock would have been slaughtered had they not been taken by outside parties. The boys returned home with their stock and cared for them to the best of their ability following instructions sent out by the University of California college of agriculture.

The experiment has been a success and the results obtained are gratifying and form a basis for much better work during the coming year. The results obtained this year will be used as a demonstration and undoubtedly many more boys can be interested in this same work next spring. Six sheep clubs were organized and the members of these clubs were able to successfully raise 376 lambs this season. These lambs are a distinct gain to the state since they would otherwise have been slaughtered and they not only increase the meat supply but also will increase the wool production of the state. In most cases these lambs will be kept and will form the foundation for probably 45 or 50 more flocks of sheep in California.

WOOL POOL FOR STANISLAUS

Farm Adviser Jungerman of Stanislaus County invites all those who have lots of wool to leave their names and amounts at his office. An endeavor will be made to pool all the different lots and make up a carload shipment direct to Portland, Oregon, which is the nearest government wool receiving station. A farm bureau committee will be appointed at the next directors' meeting August 7. Each grower will be allowed his proper apportionment according to grade and quality, the wool being graded by wool experts. At the next direcvtors' meeting of the farm bureau, a committee will be appointed to help handle the wool clip.

HOW A COW HELPED SHIPBUILDING

Frank Parker Stockbridge, in the World's Work for July, tells of the various methods by which Mr. Schwab is speeding up shipbuilding. Here is how a Jersey cow was used:

"How many ships are you going to get into the water this year?" Mr. Schwab asked Rear-Admiral F. T. Bowles, assistant general manager of

the emergency fleet corporation, in charge of construction at the Hog Island yards.

"Our program calls for 31, but we are going to try for 48 at least," was the reply.

"Make it 50 and I'll see that you get the best Jersey cow in America," said Mr. Schwab. The admiral has a dairy farm in Massachusetts. "I'm going to begin picking out that cow right away," said Admiral Bowles.

Hogs---Helpful Hints

C. M. VESTAL is author of Circular 201 issued by the agricultural experiment station, University of California. Its title is "Helpful Hints to Hog Raisers." Here are a few of the hints which show how a large fund of information is packed into a number of short paragraphs in the eight page circular.

On Feeding, Care and Management

Little capital is required to produce a few hogs and the profit comes quickly.

There is a place on every farm for at least one sow and her pigs, because there is waste feed that they will consume. Preventing waste and producing pork is doing double service.

Careful management and feeding of brood sows and pigs is the way in which the wise grower doubles his chances of a good profit in finished hogs.

Hogs are good scavengers but don't force them to prove it. Give them a chance to prove it.

Raise two crops of pigs a year. It is a common practice in Eastern and Central states. California conditions are more favorable than those of the East for this practice.

Use the best boar that you can secure.

Have the sows in gaining condition but not fat at breeding time.

Feed the pregnant sows well but don't get them too fat. Liberal feeding of alfalfa hay, alfalfa meal, or wheat bran, with some grain helps to prevent over-fatness, furnishes protein, saves grain, and keeps the bowels in good condition.

Plenty of exercise helps to prevent excessive fatness in brood sows, keeps the boar in good condition, and assures good growth in well-fed pigs. Arrange pens, feed troughs, and sleeping quarters so that some exercise must be taken. Hogs on pasture usually get plenty of exercise.

Provide clean, comfortable quarters for the brood sow, especially at farrowing time. Individual houses are cheap and handy to move about. (If you want plans write to the Agricultural Experiment Station, Berkeley, California.)

Arrange to have the sows farrow early. The early pigs usually have the advantage of a better market.

Give sows that are suckling pigs plenty of milk producing feed. The cheapest gains are made by young pigs.

Feeder pigs can usually be raised cheaper than they can be bought.

Make a creep or separate pen for the pigs that are about three weeks old. They are then ready to eat some solid feed. A mixture of ground grain and wheat middlings, made into a thin slop with skim milk is one of the best. Avoid barley hulls, oat hulls, bran and rough bulky feeds. Ground oats and barley are good if the hulls are sifted out. Do not over-feed but feed often, say three times a day, just what they will clean up.

Save the best gilts and breed them to a good pure bred boar. This is the best method of building up a good producing herd. Keep the sows that prove to be the most profitable producers.

Boar pigs which are intended for market should be castrated while they are small, usually before weaning. This is the easiest way and is best for the pigs.

Indian corn is the best fattening grain for hogs. Barley, milo, and kafir are 90 to 95 per cent as efficient as Indian corn. They all need supplementing with a protein feed.

Tankage, wheat middlings, cocoanut meal, linseed meal, soy beans, skim milk and buttermilk are some of the best protein supplements to use with barley, milo, corn and other low protein grains. Of the forage crops, alfalfa, clover, soy beans, cowpeas, and rape are the best for supplying protein.

Barley, wheat, rye, milo, kafir, and other small grains should be ground or rolled. Soaking serves the same purpose with barley, wheat, and rye, but is not so good with the sorghum grains.

Soaking ground grain is unnecessary. Fresh slops are usually safer than those which have stood for some time, especially in warm weather.

It doesn't pay to cook feed for hogs. In many cases the feeds are made less valuable. Potatoes and beans are, however, improved by cooking.

Pumpkins may be grown as an extra crop. They are fine for brood sows suckling fall litters.

Forage crops cheapen production. Alfalfa, clover, rape, soybeans, wheat, barley, and rye pastures are some of the good ones. Alfalfa ranks at the top.

Pasture crops give the pigs a good start but it takes grain to finish them.

Young growing pigs should never be forced to live on pasturage without grain. Give them at least two pounds of grain for each 100 pounds body weight.

Alfalfa pasture saves from 15 to 20 per cent of the grain for fattening hogs. It saves a great deal more for brood sows and young breeding stock.

THERE IS NO SUBSTITUTE FOR MILK AND BUTTER

Milk is one of the most important food sources the human race posesses. For the proper nourishment of the child it is absolutely indispensable and its use should be kept up in the diet as long as possible. Not only does it contain all of the essential food elements in the most available form for ready digestion, but the recent scientific discoveries show it to be especially rich in certain peculiar properties that alone render growth possible. This essential quality makes it also of special value in the sick room. In hospitals it has also been shown that the wounded recover more rapidly when they have milk.

For the purpose of stimulating growth, and especially in children, butter fat and other constituents of milk have no substitutes. Therefore, every parent owes to himself and to his family the duty of providing requisite amounts of milk, butter, cheese and other dairy products. During this last winter, when much agitation was had in some of the larger cities over the price of milk, which was advanced from two to three cents a quart by reason of the rapid rise in the cost of feed and labor, many families among the poor were found giving their children tea and coffee instead of milk. Such methods of feeding fail to nourish the child properly.

The widest possible publicity should be carried on through public channels to bring these essential facts to the attention of all mothers.

In spite of the shortage of milk in Germany, that country has at all hazards maintained the milk ration of the children and in the hospitals, even though to do so has meant that the adult population has had to forego largely its use. In a "safety first" health campaign it must be remembered that it should be "children first."

All roads of "service" lead to France.

REMEDY FOR STRINGY MILK

Stringy milk is caused by bacteria which enter the milk after it has been drawn from the cow. It is not caused by the feed or any abnormal condition of the cow. Milk affected in this way is not unhealthful, but it is certainly not appetizing. The bacteria which caused the trouble live in water ordinarily, and probably enter the milk from the cows' bodies, or from utensils. Where trouble arises from this condition the utensils, especially the strainer cloth, should be boiled. If this treatment does not eliminate the trouble, the fresh milk should be heated on the stove to a temperature of 150 degrees, then let stand 20 minutes and cooled as quickly as possible.

Production and self-denial are the guns that will get the Huns.

CALIFORNIA CHAMPION HAMPSHIRES

As good as the best and better than the rest. A boar or a sow pig sired by my great herd boar Director, and out of one of my choice sows will add prestige to your herd. I am booking orders now for the pigs of March and April farrow. Write now and place your order.

L. A. DENKER

Boquet Canyon **Saugus, Cal.**

The Best is Good Enough for You

PIGS BY NOTED SIRES

DUROC JERSEYS

High Orion 221329, has a refused price of $3,500; Great Wonder 180989, Grand Champion at Iowa; Giant Invincible 208823, heads Waltmeyers Iowa herd; King Orion Cherry 80765, first Junior Yearling, Indiana and Ohio; King of Orions 240249, highest priced pig ever sold; Model Crimson Wonder 181217 a noted prize winner. Russel's Model 205512, second place at Nebraska.

GET ONE OF THEIR PIGS

H. P. Slocum and Sons

Willows, California

We are selling a hog that a farmer will want to buy at a price a farmer can afford to pay.

Write for illustrated booklet telling about our Berkshire herd and

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ANCHORAGE FARM Orland California Quality Products

Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, $2145 cash awards. Write to

M. Bassett

Hanford, Kings County, Cal.

Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 426982, grand champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Building
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CARRUTHERS FARMS
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HEREFORDS

A large herd of selected stock to choose from.
Everything sold is guaranteed as represented.
Why send East for breeding stock when we can supply your needs. Save time and money by writing us for particulars.

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The direct selling method from producer to consumer, and a clearing house for over 31,000 readers, weekly.

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TREES

For Sale to Nurserymen or Large Planters—Owner of a large block of very fine Eureka Lemon trees will sacrifice at a ridiculously low price to those who will take a large quantity. These are not old dirty culled over stock, but strictly first class trees, clean, thrifty and straight, budded high on sour stock, never have been frosted or stunted in any way. Ground has to be vacated by July 1, so this stock will actually be sold at LESS THAN SEEDLINGS CAN BE RAISED. Address X, California Cultivator.

JUST AS A TRADE WINNER.
I am offering to the first fifty applicants, one dozen budded avocado trees for one dozen dollars. One Linda, 1 Rey, 1 Pueble, 1 Dickey A, 2 Fuerte, 3 Lyon, 3 Sharpless. They will be nicely balled, fully guaranteed root and branch. Ready for delivery in May or June, 1919. Write for further particulars, illustrations and instructive catalogue. A. R. Rideout, Rideout Heights, Whittier, California.

For Sale—Very fine Valencia trees, two year high buds; ¾ inch to 1¼ SOUR ROOT. Also yearlings, SWEET ROOT, ½-in. to ¾-in. all very thrifty, finest soil for balling. S. R. Coate, 564 So. Los Angeles St., Anaheim, California. Pacific 403 J.

For Sale—Seed Bed Stock, Orange and Lemon Trees, and Avocado Trees of all standard varieties. Walker-Hubbard Nursery Co., San Fernando, California.

Citrus Trees — All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park, California.

Citrus Nurseries, Murphy Oil Company East Whittier, California. Selected stock for sale; inspection invited.

FARM LANDS FOR SALE

A BIG LAND OPENING
COWS, HOGS AND A BANK BOOK.
Your dream of life, of ease, comfort and independence awalt you at
BIRMINGHAM.
On Port Susan Bay, Snohomish County; 6000 acres of the best land that lies out doors; a 2 hours' ride from Seattle places your feet on the richest, most productive soil in the whole state of Washington; rail and water transportation; near paved roads, schools, churches, cannery and condensery; 3½ miles of waterfront and finest beach on Puget Sound; 20 miles of beautiful lake shore, surrounding 8 picturesque lakes; these lakes teem with trout. Get in on the first choice for $35 per acre and up; 10 yearly payments, 6 per cent interest.
This is but the beginning of the story of Birmingham. Send to the owners for illustrated literature. BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

400 acre stock and grain ranch 3 miles Pleasant Valley R. R. station, Mariposa County, California; 100 acres cleared and tillable, nearly all of the 400 acres could be farmed if cleared of the large oak and other trees, wood sells for $12 per cord at station, 3 and 6 room house, large barn, and out buildings, black smith shop and tools, ranch fenced and cross fenced, part hog tight, hogs never have cholera here, family orchard and garden irrigated from springs. Average rainfall 29.88 inches; grapes, olives, almonds, etc. grow without irrigation, feed in pastures and free outside range adjoining knee high, elevation 1500, no alkali or hard pan, ½ mile school and church, $30 per acre including 300 goats, 3 horses, 3 head cattle, turkeys and chickens and all farm implements. $3000 cash, balance long time 7 per cent. Fred B. Palmer, owner, Coulterville, California.

For Sale — Forty acres located thirty miles north of Fresno. Nine acres alfalfa, 15 acres corn and 14 acres raw. Five-room bungalow with bath, hot and cold water, barn, tank house and electric pumping plant with large dirt reservoir. Terms extremely reasonable. Price $8500.00. $740.00 cash which includes interest for one year. The second year 4 per cent interest only, third year five per cent interest only; fourth year six per cent interest and $500.00. Fifth, sixth and seventh years $1000.00 and interest at six per cent. Balance of payments to be arranged. Did you ever see anything easier? Owner has more land adjoining and you can buy more if you wish. A mighty easy chance to get a start with a little money. Address Owner, 1329 Wishon Avenue, Fresno, California.

For Sale — 160 acres, Lone Pine, Inyo County, part in alfalfa, free gravity water; house, barn, fruit, spring, trout stream, price only $4000 including team, wagon, harness, mowing machine, rake, plows, cultivator, etc. Easy terms if desired. F. G. Simmons, Whittier, California.

20 acres deep silt land, joining good town on the South; 10 a alfalfa, 10 a grain; 800 feet to railroad station. Plenty of water for irrigating. Soft water piped on place. Price right. Chas. McNeely, Alpaugh California.

For Sale—Coachella Valley fig and date ranch. Best fruit proposition in Southern California. Bears fruit from May to January and brings top prices. A. L. Wood, Indio, California.

Be Patriotic, Raise Stock on productive government land, plainly marked on county sectional maps. $2.50 ANY county. Booklet, particulars for stamps. Write Joseph Clark, Sacramento.

Manteca Small Farms bring big returns. See them and buy now before the fall rush. Irrigation and no failures. Walter Buchanan, Ripon, California.

For Sale — Country store, $600 monthly sales (at invoice) with olive ranch, 5 ton crop, buildings and implements, at $2,500.00. C. J. Bailey, Valley Center.

MACHINERY

WINDMILLS. TANKS. PUMPS
Why buy New Machinery?
We save you half on most material. 50 windmills, 8, 10, 12 and 16-ft. sizes. Why fight engines? (If you want to fight get paid for it.) Otherwise buy windmills. 16-ft. mills do 6 hp. work, 20 mile wind. Cost nothing once installed.
Redwood Tanks. Iron Tanks.
Dozen brand new redwood tanks while they last, 1500 gal. $27.50; 3000 gal. $37.50 with heads. Dozen Oak bbls. 150 gal. capacity, nearly new, $7.75 each, cost $20 to make.
Iron tanks. Most all sizes. Some less than half price. 900 gal. riveted wagon tank $68.
NEW GALV. TANKS.
1000 gal. $35.00; 2000 gal. $48.
Cylinders. Cylinders. Cylinders
Biggest stock used cylinders in California, 2-in.x12-in. to largest double acting; brand new 8-in. double cost $300 for $175.
RANCH TOOLS.
Used plows, mowers, rakes, cultivators, spike harrows, bean cultivator $45; spring tooth harrows. Emerson mower like new $45.
IRRIGATING PIPE — 3000 ft. 4-in. 16¾c ft; 4-in. riveted 16c; 2000 ft. 3-in. 13c.
Hand windmill force pumps $2.00 up. Deep well double acting Ames, $145, or complete with 7-in. cylinder 100 ft. 8-in. pipe, rods, $375. No. 4 vertical two-step centrifugal pump, $150; 6-in. horizontal centrifugal, $125. Many others; 20 short lengths flexible drum cable, 50 to 150 ft. 8 to 15c a ft.
Why do we advertise to sell for less? Sell for cash only. Pioneers. Have our own repair shop. Also buy good serviceable machinery. Write description and price in first letter. Call, write office DEMMITT CO., 120 No. Main, Los Angeles. Bdwy. 1984, 15191.

For Sale—600 ft. 11 inch steel surface pipe, new; 30 rolls 1½ inch mesh 4 foot chicken wire, new; 322 feet 10 inch stovepipe well casing; 1 No. 6 centrifugal pump and frame complete; 1 Cleveland tractor; 1 2-3 Moline power lift plow; 1 8 foot double disc; 1 8 foot grain drill. Condition good. Almost new. Price right. Sale on account of army draft this winter. H. S. Weldon, Box 215, Victorville, California.

For Sale—A bargain. 5-10 Avery tractor in first class condition. D. V. 4 Bosch Magneto Clarifier, extra strong guards on wheels for orchard work. Can be seen at C. Stones Ranch, Casitos Ave., North Pasadena, California. Phone Pasadena, Fair Oaks 1670. Price reasonable.

REMANUFACTURED PIPE
All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.
WEISSBAUM PIPE WORKS,
169 Eleventh St., San Francisco.

Automobile Motors for Sale—These used motors in fine condition; for stationary work, pumping or for tractor. Bargain prices. Big supply. Send for catalog. Economy Auto Parts Co., 490 Golden Gate Ave., San Francisco.

For Sale—35 H. P. Samson Gas Engine and 6-in. vertical centrifugal pumps. Used one season. Will sell separate. Chas. Hoddinott, Herndon, Fresno County, California.

Gasoline Engines, the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

For Sale—New Ohio Power Feed Cutter No. 11. Thirty feet of six pipe, capacity three to six tons. 70 feet of 12 gauge 16 inch well casing. I. I. Bennett, Etiwanda, California.

For Sale — Samson Tractor, 10-25 overhauled and excellent condition, $1000.00. Geo. E. Small, Terra Bella, California.

RABBITS

Go Into Business for Yourself — Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

A Fortune in Rabbits—Have raised the price we will pay to $8.00 per pair. Want you to raise them for us. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

Rabbits, Remedies and Supplies — Free list. Agents wanted. Caldwell Rabbit Farm, Los Angeles, California.

For Sale — Rabbits. New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.

For Sale — Rabbits, New Zealand Red bucks, young stock. Fine ones. W. O. Robb, Galt.

MISCELLANEOUS

Envelopes and Letterheads Like Every Farmer Needs. We design and print farm names, scenes, livestock, poultry and agricultural subjects. Write for samples of farm stationery. Brown, Designer & Printer, 1377 Palm Terrace, Pasadena, California.

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LIVE STOCK

For Sale—The Pure Bred Percheron stallion "Drusus" 104782, winner of many prize ribbons, is for sale to settle an estate. For pedigree and full information regarding this beautiful stallion apply to WM. H. MOORE, JR., Trustee, 704 Higgins Building, Los Angeles. Telephones 10112, Main 4622.

HOGS

BERKSHIRES GUERNSEYS
GRAPE WILD FARMS
A few fall boars left by Royal Superbus —also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
A. B. HUMPHREY,
Escalon, San Joaquin County, California.

Poland-Chinas — Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair, 1916 and sire of the 1917 State Fair grand champion or I. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale I. Marsh, Modesto, California.

"Billiken" Chester Whites — The Easy Feeding Mellow Type. All bred sows and bred gilts are gone. Have 15 gilts that were farrowed in May, 1917, that will be bred for September farrows. These gilts are all sired by "Billiken." One young service boar that is just 13 months old. C. B. Cunningham, Mills, California.

Superba, World's Grand Champion Poland-China boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, California.

We Pay Cash for Hogs of All Sizes, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building. Broadway 4170. 3030 E. Vernon Ave., South 2712-J. Los Angeles.

Rancho Rubio Durocs—Thirty of the finest fall gilts we ever raised. Will begin breeding May 10. Write for prices and pedigrees. Some splendid weaned boar pigs for $25.00. Elmer Lamb, Ceres, California.

Mule Foot Hogs, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California, "The Blue Gums."

Duroc-Jerseys—A few spring boars, outstanding individuals, sired by Johnson's Defender and out of State Fair winning sows, for sale. Frederick M. Johnson, Napa.

For Sale — Registered Berkshire pigs sired by Lord Premier's Successor 11th. J. Pringle, at Oak Crest, Cahuenga Pass, R. D. 10, Box 864, Los Angeles. Holly. 14R3.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

Large Type Poland-Chinas are prolific and profitable. Can furnish boars any age at reasonable price. J. A. Crawshaw, Hanford, California.

For Sale—Two registered Berkshire sows, Wilentha Lady 40th, 240589 and 41st, 240590. Age 14 months. Wendell C. Stone, Wineville, California.

For Sale—Pure-bred Poland-China breeding stock, 6 to 12 weeks old. None better in Sacramento Valley. Address Fred A. Clark, Hamilton City, California.

Duroc-Jerseys — We breed the champions. Peters, Lamson & Walker, Devore, San Bernardino County, California.

Greenwood Farm Durocs — "Size with Quality." H. C. Witherow, Palo Cedro, California.

HEWITT'S BIG TYPE POLAND-CHINA gilts and boar pigs. Hewitt & Hewitt, Dixon, California.

Registered Durocs of the big type—Cholera immune. Derryfield Farm. Odd Fellows Building, Sacramento, California.

Berkshires—A few very fine March farrow pigs, sired by Fair Oaks Champion. Fair Oaks Ranch, Willits, California.

Carruthers' Farm Berkshire Hogs—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Orland, California.

BIG TYPE POLANDS
W. H. BROWNING, WOODLAND, CAL.

AGRICULTURAL IMPLEMENTS

IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches
ARNOTT & COMPANY, INC.,
The Yellow Front. Established 1892.
112-118 S. Los Angeles St., Los Angeles

Have Paid $1000.00 on new Rumley Gas-pull tractor for July delivery. Plans changed. Don't need tractor. Will discount price $200.00 for cash sale. List price $2500 cash. F, Care Cultivator.

For Sale — Bean TrackPull tractor slightly used. Address Holmes Date Gardens, Indio, California.

LUMBER

Lumber-Sash-Doors-Plumbing - Supplies —Building materials of all kinds. New and second hand *A*R.W. shingles 60c per bundle. Send list for estimates. Dan P. (Mission Street) Dolan, 1620-1650 Mission street, San Francisco.

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Patents that protect are secured through The PACIFIC COAST PATENT AGENCY, INC., Savings & Loan Building, Stockton, California; send for our little booklet on "Patents."

Patents — Copyrights, trade marks and labels registered. Solicitor of American and foreign. James R. Townsend, 712 San Fernando Bldg., Los Angeles. Phones: Home A4619; Sunset Main 347.

FERTILIZERS

Lime—Slaked. Corrects heavy sour soils quickly. H. B. Matthews, 495 Douglas St., Pasadena.

CATTLE

Guernseys—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., California.

Two Registered Holstein Bull Calves out of A. R. O. cows with high milk and butter records. Ten and seven months old. Fine individuals. Will sell at a bargain to make room. Call or write. California George Junior Republic, Chino, California.

SHORTHORN CATTLE. SHROPSHIRE SHEEP, Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Guilford. Owners.

Pedigreed Bull Calves, Registered $50.00, unregistered $25.00. Service bulls $75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, California.

For Sale—Six registered, pure bred Holstein bull calves. Nice straight individuals ranging in age from two weeks to one year old. Price $50.00 to $125.00. Address Laurel Dairy, R. F. D. No. 1, Box 17, San Luis Obispo, California.

For Sale — Four Holstein-Friesian bulls from 8 to 18 months old. Pedigreed stock. Fine individuals. Will be registered on sale. Geo. C. Roeding Company, Fresno, California.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, California.

Registered Shorthorns, cows with calves at foot, yearling heifers and bulls for sale. Fair Oaks Ranch, Willits, California.

Ayrshires (registered — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn. Phoenix, Arizona.

Elkhorn Farm Ayrshires—For sale young bulls of exceptional breeding and individuality. J. Henry Meyer, R. D. 2, Box 82, Watsonville, California.

Sunshine Farm Jerseys — Young bull, ready for light service, for sale. E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

REGISTERED JERSEYS FOR SALE.
J. R. CARHART, FULLERTON, CAL.

POULTRY

Fall Chicks For Sale—400,000 S. C. White Leghorn chicks from free range Hoganized stock only, for delivery from July to December, at very reasonable prices. Fall chicks are most profitable—broilers in ten weeks, pullets lay at five months. We guarantee safe delivery of all chicks to destination. Shipped safely anywhere West of the Rockies. No money in advance, pay on delivery. Special prices on 500 and 1000 lots. Finest hatchery in the world. Established over twenty years. Further information write Must Hatch Incubator Company, 424 Seventh Street, Petaluma, California.

Start Now Highest Priced Broilers, Roasters — Hundreds vigorous chicks weekly, large stock, Reds, Rocks, Anconas, Minorcas, 15c, 16c, Leghorns 13c, 15c, Wyandottes, Orpingtons, Brahmas 20c, 25c, 8 week, older pullets, cockerels, ducks, turkeys. FEW FINE BREEDERS GREATLY REDUCED. Males below half. Government trapnested, 200-283 eggs yearly. Clearing $5.00. James Beeson, Pasadena, California.

Thoroughbred Barred Plymouth Rocks—Fertile eggs for hatching. $2.50 per 15 eggs. Orders taken for baby chicks August, September and Octoher delivery, 25c each. Rocks hatched these months lay 75 per cent at one year old. Warren Poultry Yards, 36 Little Deimas Ave., San Jose, California.

Fall Chicks—August 12th, forward! R. I. Reds—White Rocks, Black Minorcas—White, Brown Leghorns—Book orders now. Circular with prices and information free. Mission Hatchery, Campbell.

Fall Chicks—Book orders now for your future meat and egg supply. Write for special circular on fall chicks. Stubbe Poultry Ranch and Hatchery, Palo Alto, California.

Chix—Barred Rocks, R. I. Reds, Orpingtons, Anconas, Minorcas, Buff, White and Brown Leghorns. Breeding Cockerels. Enoch Crews, Seabright, California.

Black Orpingtons Lay, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, California.

Eastman's Bred-to-Lay Barred Plymouth Rocks. Hatching eggs. Fairmead Poultry Farm, Fairmead, California.

SEEDS AND PLANTS

Early Amber Sorghum makes the best silage and produces the greatest tonnage per acre. Recleaned seed 9c per pound f. o. b. Stockton. Fancy recleaned Sudan seed at 18c per pound f. o. b. Stockton, in lots to suit. Aurora Seed Mill, 48 N. Aurora St., Stockton, California.

Sudan Seed 17½c, Amber Cane 7½c, Feterita, Egyptian Wheat, Red and White Milo Maize. Hickory King Corn extra good. Dwarf White Milo Maize yields 21 sacks per acre. S. Peruvian Alfalfa. Box 501, Fowler, California.

Cabbage and Cauliflower seed, also late plantings of many vegetables should be started now. Buy of C. C. Moore & Co., dealers in good seeds, San Francisco.

FOR EXCHANGE

For Exchange—80 acres rich level soil, Casa Grande Valley, Arizona, for smaller acreage in California. Address L. F. Beaty, Bremerton, Washington.

WANTED

Wanted—Partner with $2.000.00 in blacksmith shop, garage and hardware store. Work for 3 men in blacksmith shop the year round. Blacksmith or wheelwright. A. Witt, Paige, Tulare Co., California.

Wanted to Buy — Yuba, Holt or Best Tractor. State condition, year made and price. Address Stuart Wolcott, Los Olivos.

Want to Hear From Owner of farm or fruit ranch for sale. O. O. MATTSON, St. Paul, Minnesota.

GOVERNMENT LANDS

Oregon, California Government Lands—Booklet free. Tells "How, Why, Where." Write Joseph Clark, Sacramento.

ENGINES

Several New and Slightly Used Engines, ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

GOATS

For Sale—Twenty-six head pure Angoras and about fifty grade milk goats. A bargain taken soon. R. Nadeau, Saugus, California.

Toggenburg Milch Goats — Rae P. Williams, Federal Realty Building, Oakland, California.

THE CALIFORNIA LEGHORN CLUB

Friday evening, July 12, the California Leghorn Club met in Los Angeles to complete the organization begun at a previous meeting. By-laws were adopted but election of officers was postponed until a larger number could be present. The program of this club is ambitious. It aims at improvement and development of all varieties of Leghorns, as well as at better methods of feeding and management. If it is carried out it will give California what it has long needed, an organization which shall be a center for better poultry work in all directions. E. E. Emerson is temporary president and Mrs. E. B. Martin temporary secretary of the club.

KEEP ON HATCHING

A San Jose subscriber, Mrs. M. A. Warren, recommends continuing the hatch through the summer days. This for the purpose of securing later summer layers for next year. Mrs. Warren adds: "Am still hatching every egg. I get even now 90 per cent fertility and 90 per cent hatch of the fertiles. Of pullets hatched last August and September there are 75 per cent of them now laying. From tests I have made I think poultry people should hatch right up to December. This applies especially to eggs from last year's late Plymouth Rocks."

EFFECTIVE LICE KILLER

By using commercial sodium fluorid in the form of powder, or as a dip, all species of poultry lice may be destroyed at one application. As the high efficiency of sodium fluorid in destroying lice on poultry is of recent discovery the material is not ordinarily found in all drug stores. With a demand for it, however, local druggists will secure supplies. Poultry keepers who desire to thoroughly eradicate lice from their flocks should write the United States Department of Agriculture, Washington, D. C., for Farmers' Bulletin 801, which gives, with full details of the use of sodium fluorid, complete information on the control of mites and lice.

The Eggs You Didn't Get

How can you expect a hen to lay 150 eggs a year or even 50 eggs if her vitality is sapped by lice and mites—all she can do is itch and fret and cost you money.

DEVIL'S DUST

A Sure Killer of Vermin—safe and economical to use

Sold Everywhere GLOBE MILLS Los Angeles, Cal.

Try COULSON'S EGG FOOD FOR GREATER EGG PRODUCTION FULL PARTICULARS IN FREE BOOK "CHICKENS FROM SHELL TO MARKET"

Coulson Co. PETALUMA, CAL

Rations for Turkeys

Written for California Cultivator By Jean A. Koethen

METHODS of feeding turkeys have changed radically in the last five years. From believing that certain articles of food are wholesome and certain others taboo for turkeys we have switched round to the theory that what is fed is, within reasonable limits, far less important than how much. This is the latest promulgation of the Rhode Island experiment station, and there is no higher authority. It is assumed, of course, that poults will be given food suitable for their very delicate digestion, but the vital thing is that they be not overfed on whatever is given.

At the Rhode Island station the first feed for baby turkeys consists of finely chopped boiled egg and dandelion or lettuce. This is left before the poults just while the caretaker is going his rounds, leaving and removing the trays, no longer, and is given on the morning of the second day out of the incubator. At 11 o'clock the meal is repeated. At two the poults are given trays containing stale bread thoroughly soaked in sweet milk. At 5 o'clock they have egg with onion top or lettuce. The next day they have one meal of bread and milk, one of chick feed and two of egg and greens. A little rolled oats is added to the breakfast of egg and greens. After the fourth day they have but three meals, one of chopped egg and greens, one of chick feed and one of bread and milk. After ten or twelve days the egg is omitted and the ration consists of chick feed, rolled oats, bread and milk and greens, and the only change which is made in this ration for two months or more is the addition of sour milk, which is placed before them in increasing quantities after the second week. In regard to the ration for the maturing poults, in addition to green feed and sour milk, the bulletin says: "By September the rolled oats may be given up, except as an occasional feed, and both morning and night feedings made to consist of mixed grain (cracked corn and wheat) alone; or if the poultryman has time to prepare it, one or two meals per day may consist of a special mash in which some beef scrap is present to take the place of the insect food which, by this time, is much reduced in amount on the range. This mash mixture is scalded, then is added a quart of sour milk. It is then mixed with shorts so as to "come up light." Next carrot or dandelion tops are chopped fine and mixed with the former combination at the rate of two parts green to one of the combination. A certain turkey raiser employs this ration for turkeys from the time they are five days old to the time they are marketed, and feeds little else.

Breeding stock at the Rhode Island station is given the following grain mixture: cracked corn, three parts; barley, two parts; wheat, two parts; oats one part. This is fed night and morning in trays or troughs at the rate of one quart to every six birds for each feeding. No other feeding is required, but sour milk is given when available.

My own ration for baby turkeys consists of stale bread chopped with young onions or onion tops, steel cut oats and cottage cheese. This is mixed in the proportion of one-third cereal, one-third green (lettuce or onion) and one-third cottage cheese. After a couple of weeks the bread and steel cut oats are replaced by rolled oats, and cracked wheat is added. On this combination rolled oats, green feed and cottage cheese, with cracked wheat replaced by whole wheat as soon as the birds will eat it for grain feed I have raised many turkeys. What I shall do now that wheat is out of the question and corn more expensive than wheat I do not know. Many persons have good success with milo and Egyptian corn, and I presume we must use what we have or stop raising turkeys. If, as this bulletin declares, the essential thing is not the feed, but the amount that is given, we may find that milo does quite as well as wheat.

"Keep them hungry" is the one infallible rule for feeding young turkeys. Even this does not always work. I have seen poults die of blackhead that had apparently always been hungry till the day they began to droop. It was evident, then, but too late, that they had not been kept hungry enough. The Rhode Island station endeavors to solve the problem by "time feeding," i. e., by leaving the tray of food before the poults only two or possibly three minutes. So far this seems to have proved satisfactory. Obviously we must feed very much less than we think the poults need and be governed largely by what they may have found on range. Poults that have good range need little else. To feed always just what the birds need and no more requires a more delicate discrimination than most of us have attained. That we shall attain it sooner or later I do not for a moment doubt.

NATIONAL EGG LAYING CONTEST

By T. W. Noland, Director

In the contest at Mountain Grove, Missouri, Pen 36, S. C. White Leghorns from Missouri won the cup again for June, with a record of 122 eggs. This pen has won the last three months in succession. The total number of eggs laid in June was 4905 or an average of 16.35 per hen.

Following are the leading pens for each variety for June: S. C. White Leghorns, Missouri, 122 eggs; Anconas, Missouri, 116; Silver Wyandottes, Missouri, 113; White P. Rocks, Idaho, 105; Barred P. Rocks, Michigan, 105; S. C. Reds, Missouri, 105; White Wyandottes, Missouri, 104; Buff P. Rocks, Missouri, 101; R. I. Whites, New Jersey, 97; R. C. Reds, Missouri, 95; S. C. Brown Leghorns, Missouri, 93; Buff Wyandottes, Missouri, 92; Black Orpingtons, Missouri, 87; Buff Orpingtons, Missouri, 75; White Orpingtons, Missouri, 70.

BEEKEEPERS TO MEET

The Southern California Beekeepers' Association, formerly known as the Los Angeles County Beekeepers' Club, is planning for a picnic and all-day meeting Thursday, August 1. The picnic is to be held in Beverly Glenn at A. S. Tice's Camp Enticing. There will be addresses in the forenoon, picnic luncheon at noon, and in the afternoon talks by members and others regarding subjects of interest to the beekeeping industry. Those who go by rail may take Sawtelle car, Fourth and Hill Streets, Los Angeles, 9:15. They should get off at Country Club station, where conveyances to the picnic grounds will be provided. Those going by auto go by the way of Wilshire Boulevard from Los Angeles, past the club to Beverly Glenn Boulevard, thence where signs will indicate the scene of the picnic.

Attendants are requested to bring sandwiches, cup and spoon. Coffee and some other good things will be served on the grounds.

Poultry can be made to Pay

THERE are two methods of gaining knowledge, necessary to make poultry a success; experience—which is a long, drawn out, expensive road and the one too commonly used. Another method is by the careful studying of books written by practical poultry people who have made mistakes and successes and are willing to give this information in order that you may take the short road to poultry success.

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Jean A. Koethen

Graduate of University of Calif.

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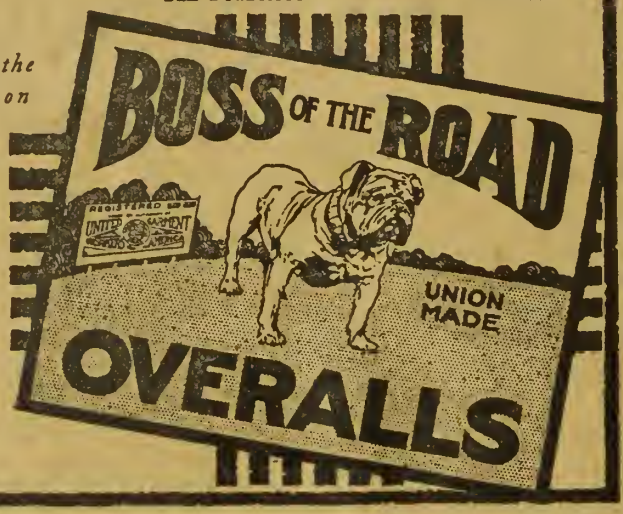

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by Ernest Braunton

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Household Department

DISCOVERED!

Molly had a knitting bag,
'Twas pink, with yellow dots,
And on it were the sweetest birds,
Cerise, with sea-green spots.

She carried it to town one day,
The public to impress;
And all the folks who saw her said:
"Some knitter! Well, I guess!"

But Molly tripped upon the curb
And open flew the bag.
They had to help her pick things up
That traffic might not lag.

They gathered all her groceries up,
They rescued meat and fruit
They salvaged powder-puff and comb,
And sundry other loot.

A box of sweets, some magazines,
An auto veil for fitting,
Fair Molly had these in her bag—
But not one stitch of knitting!—J.B.

REFORMED

By Gordon Veeder Carruth, in Youth's Companion

AFTER supper on the fourth day after his wife had left he stood with his hands in his pockets, surveying the heap of dirty dishes to which he had just added those that he had used.

"There's no doubt about it," he murmured to himself. "Those dishes ought to be washed. Mary would be scandalized. Still," he went on, as he searched for a ray of hope, "she won't be back for ten days yet, so I've plenty of time to do them before she comes."

As he spoke, his glance wandered through the door to the china closet in the dining room.

"Why, I've hardly made an impression on them yet," he said, brightening perceptibly. "Lucky thing we had so many given us. After all, now that they've got ahead of me, there's no hurry. I'll let them go as long as I can and then wash them all at once. That will be better than messing round half a dozen times with a little dab lot."

Thereafter each evening after supper he fixed an apprehensive eye on the china closet. Slowly its contents went to join the pile in the sink, until there came the night when there were no more clean dishes.

"Mary won't be able to leave her mother for a week yet," murmured Mr. Thornbury as he faced the foe in the kitchen. "Besides, it wouldn't be fair to ask her to come home and tackle that pile of dishes. Moreover, I've got to eat until she does come home. There seems to be nothing for it, old man."

It was then eight o'clock. Mr. Thornbury found the dishpan, filled it two-thirds full of water and set it on the gas stove to heat. While he waited, he sat down to read the evening papers. When he finally remembered his dish water it was steaming hotly.

"All the better," he said to himself. "I've often heard Mary say that the hotter the water the easier the washing."

He slipped as many dishes into the pan as it would hold, found the soap and the dishrag and dropped them in also. Then he rolled up his sleeves and, whistling cheerfully, plunged his hands into the water. He took them out at once and danced about the kitchen, waving them over his head in the cooling air.

"I never knew that Mary had patent asbestos skin on her hands," he said, when he came to the rational part of his discourse. "I'll have to look into it when she comes home. Perhaps I can contribute an article about her hands to the Medical Review.

His eye fell on a dish mop, and he seized it eagerly. "Maybe this will help," he said, "if it doesn't perish from the heat."

It did help. No longer was it necessary to put his hands into the water, for he could poke the dishes out until he could grasp them with his left hand and wash them with the mop. He became more cheerful.

"A wonderful invention," he said to himself. "Probably Edison had to wash the dishes once and scalded all the skin off his hands the way I did, and so sat right down and invented this useful little instrument. Beautiful instance of action and its reaction on the inventive mind."

Mr. Thornbury thrust the dish mop forcibly down into a tumbler filled with water. A thick stream of the hot, soapy water shot up like a geyser and penetrated his shirt sleeve.

"Action and reaction," he muttered, clapping one hand on his afflicted arm and taking quick steps about the kitchen, "action and reaction, action and re— Stop, now-" he commanded himself. "Don't lose control, old man! Now! Three deep breaths! One! Two ! Three!"

When he was calmer, he continued his task gingerly. He got along all right until a gathering of grease on the water warned him that it was getting cold. Sighing heavily, he poured it out and set more water on the stove to heat while he dried the dishes he had just washed.

Mr. Thornbury had fair success with the wiping, although one teacup rather uncannily dropped off its handle.

"Feeble stuff they put in this china!" he muttered as he gathered up the fragments. "What I like is the sort of ware they have in the quick lunch rooms. Why, I dropped a cup off the arm of my chair the other day and it bonuced seventeen times before it stopped. Never even chipped it. I'll have to speak to Mary about getting some of that—although something tells me she won't do it."

Having gained valuable experience with his first lot of dishes, Mr. Thornbury got along slowly but without mishap with the second until the very last. Then a heavy bowl slipped from his fingers and fell back into the dishpan. A large wave immediately rose over the top of the pan, slapped Mr. Thornbury about the waist and flowed wetly down to collect finally in his low shoes and in the cuffs of his trousers.

In a high, falsetto voice, full of the tremolos of deep emotion, Mr. Thornbury sang:

"Throw out the life line!
Throw out the life line—"

A vigorous pounding on the floor of the apartment above notified him that his music was not well received.

"My friend," he said solemnly, addressing the ceiling, "if you were aware what a volcano of revolt is rumbling below you, you would be thankful that nothing worse than a little song penetrates your floor."

After a somewhat ineffectual attempt to dry himself, Mr. Thornbury worked wearily but warily at his third and last lot of dishes. In spite of his care, however, a plate collapsed weakly when it slid from his fingers into the porcelain sink. Finally, there was nothing left to wash except a frying pan or two and ten days' accumulation of milk bottles. He scoured with aching arms at the pans until they were clean, and then he attacked the milk bottles—a difficult task for the amateur.

Slipping a small piece of soap into the first one, Mr. Thornbury admitted an inch or two of water, clapped his hand over the mouth of the bottle and shook it vigorously. The air within the bottle, suddenly expanded by the heat of the water, shot a stream of suds through his fingers and into his eye.

Mr. Thornbury was too far gone to do anything except groan.

"Even the milk bottles!" he said bitterly. "Who would suppose that a peaceable-looking milk bottle would turn savagely on the man that took it in and gave it a home?"

If anyone had seen Mr. Thornbury when everything was at last washed and dried, he would have been astonished that a light of such determination could gleam in the eyes of a man so physically jaded.

Working rapidly, he placed every piece of china and silverware in the china closet. To be sure, they were not exactly in the order in which Mrs. Thornbury usually kept them, but at last he got them all in. Then, after standing for a moment in deep thought, he took out one cup, one plate, one cereal bowl, a knife, a fork and a spoon. Those he placed on the dining-room table and then carefully locked the china closet.

He next carried the key to his desk in the library, where he sat down and addressed an envelope to his wife. In it he inclosed the key and a short note. Then he went down four flights of stairs to the street and mailed his letter in a box on the corner two

The Cultivator Patterns

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PATTERN DEPARTMENT
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U. S. Food Administration.

Ol' Squire 'Tater 'low he goin' to be mighty nigh king er de roos' 'mong garden sass folks. We alls kin eat him as a 'tater boiled, baked, fried, stewed, cooked wid cheese en dey gettin' so dey make im inter flour; so's we kin "substi-tute" him fo' wheat flour. He's de "substitutenest" of all de vittles, he sez.

De udder garden sass folks lak inguns, tomatues, cabbage en turnips en squash don't need to git peeved, 'cause dey's goin' to be room in de pot fo' de whole tribe. Ev'y las' one on 'em can he'p save wheat en meat fer de boys dat's doin' de fightin' over yander.

blocks away. Wearily he dragged himself back; weakly he climbed the four flights of stairs, and tumbled into bed exhausted. It was then one o'clock.

Not until some time after Mrs. Thornbury came home did she succeed in eliciting from her husband the painful explanation of the note that she had received with the key. It read as follows:

"Dear Mary: I have locked up the china and am sending you the key. Keep it, if you wish to save either me or the china.—Your wiser and sadder, Howard."

DESSERTS FROM SUBSTITUTES

Written for California Cultivator by Blanche A. Gardiner

There has been so much said recently about the inferior qualities of the wheat flour substitutes, that some people seem to think that practically all appetizing desserts must be eliminated from their menus. This, however, is far from being true. Just as dainty and palatable desserts may be made from the other flours as from the wheat. There are certain points though that must be followed.

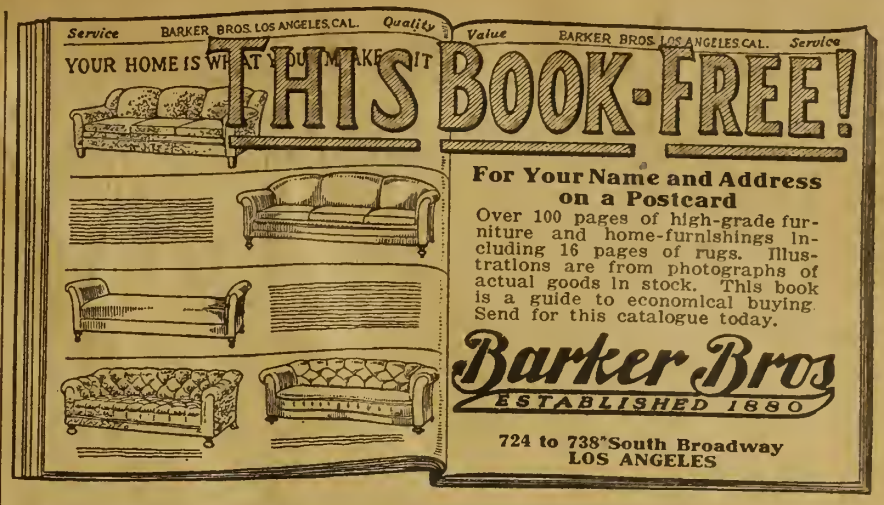
First.—If the recipe on hand calls for two cups of wheat flour, use two and a quarter cups of the substitutes; and instead of the customary two teaspoons of baking powder, it will be necessary to use three.

Second.—It is more satisfactory to make cup cakes than layer cakes, for they hold together better, and as there is more crust they are less liable to fall.

One of the simplest of these is made from ¼ cup shortening, ½ cup sugar, 1 egg well beaten in cup, then fill cup with milk; 2¼ cups of mixed flour (equal parts barley, oat, rice) or (barley, potato, corn) or (barley, rice, corn); 3 rounded teaspoons baking powder; 1 teaspoon lemon or vanilla flavoring.

This will make twelve good-sized cup cakes or a two-layer cake or a good loaf cake. By using this recipe as a foundation, a great many delicious cakes may be made. For example, add cocoanut, ground nuts, raisins or oatmeal which has been cooked, to the cake dough, and a different result will be obtained each time. With a hot sauce these cup cakes may be used as individual puddings. Different kinds of frostings add to the daintiness of this recipe. The following is most appetizing: ½ cup powdered sugar, ½ cup cocoa, 1 tablespoon shortening; rub these ingredients together and add hot coffee until the right consistency for frosting is reached. Hot water may be substituted instead of the coffee, and crushed raspberries or strawberries added to the mixture.

It is not necessary to go without desserts, and these cakes are both wholesome and nourishing and contain nothing which should be conserved.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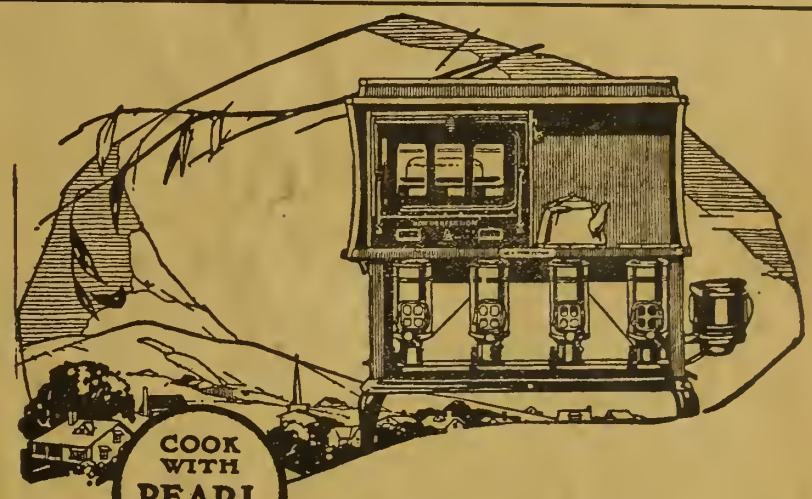
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Los Angeles Market

Los Angeles, July 24, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.
California extra creamery 50

Dairy Exchange price past week on extras.

July	17	18	19	20	22	23
'18 ...	50	50	50	..	50	50

Rcts. wk. ending July 23, 183,386 lbs.

CHEESE

Brokers prices:
California fresh, lb. 26
Eastern Daisies 29
Oregon triplets 27

EGGS

Exchange quotations. Prices to retailers 2 to 3 cents higher.
Fresh extras 46
Case Count 46
Pullets 44

Dairy Exchange prices past week on fresh extras.

July	17	18	19	20	22	23
'18 ...	45	45	45	..	46	46

Rcts. wk. ending July 23, 1025 cases.

POULTRY

We quote to producers.
Broilers .....28@32
Fryers 32
Hens, small, 19; heavy .....21@23
Colored 26
Ducks, lb., 20; ducklings .....23@28
Roasters 32
Roosters, old 16
Turkeys .....27@30
Geese 15
Rabbits, live, 17@18; dr. 40

LIVESTOCK

We quote cwt. f. o. b. L. A.
Corrected Wednesday morning July 24, by the Cudahy Company.
Cattle—
Beef steers, av. 1000-1100 lbs—11.50@12.00
Heifers, good .....8.50@9.00
Cows, good .....8.00@8.50
Canners .....5.00@5.50
Hogs—
Av. 125 lbs. 15.50
Av. 150 lbs. 16.00
Av. 175-225 lbs. 16.50
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers .....11.00@11.50
Ewes .....10.50@11.50
Lambs .....14.50@15.00
Yearlings .....11.00@11.50

POTATOES

Wholesale selling prices:
New, lug 75
Sweet, lb. 7

ONIONS

Wholesale selling price, cwt.:
Brown, cwt. 2.50
Garlic 10
White, lug .....1.10@1.15

VEGETABLES

Wholesale prices:
Artichokes, doz. .....60@85
Jerusalem. lb. 7½
Beans—Wax, lb. .....5@6
Ky. Wonder .....6½@7
Limas, lb. .....7½@8
Beets, sk. 2.00
Cabbage, lb., 3@3¼; sk. 2.25
Carrots, doz. 30
Corn, sugar, lug. .....85@90
Cucumbers, lug .....70@75
Egg Plant, lb. .....7@8
Horseradish, lb. 15
Lettuce, doz. .....30@35
Leeks 35
Okra, lb. 12
Mint, doz. 40
Onions, green, doz. .....25@30
Peas, Tel., lb. .....13@14
Peppers, Chili, lb., 15; Bell .....12@13
Parsnips, doz. 40
Parsley, doz. 20
Radish, doz. 30
Rhubarb, C. W. bx, 1.15; Strawberry 1.30
Squash — Summer, lug .....65@70
Tomatoes, cr. .....1.00@1.35
Turnips, doz. 50
Watercress, doz. .....35@40

FRUITS

Wholesale prices:
Apples, new, lug 1.35
W. Astrachan, bx. .....2.85@2.90
Apricots, lug. .....1.25@1.35
Bananas, lb. .....6¾@7
Cantaloupes — Ponies, cr. 2.50
Standards 2.75
Crabapples, lug 1.35
Currants, cr. 1.85
Figs, bx. 1.00
Grapes, Malagas, lb. .....7½@8
Peaches, Freestone 1.85
Clingstone, lug 2.50
Plums, lug .....2.50@2.75
Strawberries, tray 1.10
Watermelons, lb. .....2¾@3

CITRUS

Lemons, packed, 5.75; loose 4.75
Juice 3.50
Oranges — Valencias 7.00
Grapefruit 3.75

BEANS

These are prices made by wholesaler to retailer.
Lady Washington 13.00
Limas 13.50
Pinks 8.00
Manchurian Reds 8.50
Baby Mex. 9.00
Garbanzos .....9.25@9.50
Small Whites 13.00
Blackeyes 8.50
Teparies .....8.50@9.50
Lentils 24.50
Mex. Red. 8.75

HONEY

Cost to producer on farm:
White extracted .....20@21
Light amber extracted .....16@18
Alfalfa amber extracted .....15@16
White comb, per case .....4.50@6.00
Beeswax, lb. 34

HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A.:

Tame Oat .....26.00@28.00
Volunteer Oat .....13.00@15.00
Wheat .....23.00@26.00
Barley .....23.00@26.00
Alfalfa .....19.00@22.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

Alfalfa hay $25.50 car lots f. o. b. L. A.; $23.00 f. o. b. common shipping points, taking $2.50 carload rate to destination.

GRAIN AND FEEDSTUFFS

Prices on Local Grain Exchange:

	Bid	Asked
No. 1 bright feed barley	$2.60	$2.65
Milo maize, local	.....	3.50
Oat middlings	.....	36.00

San Francisco Markets

San Francisco, July 23, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares, in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:
Extras 52
Prime firsts 49
Firsts 47

Prices Extras past week and year ago.

July	16	17	18	19	20	22
'18 ...	51	52½	53½	53½	52	52
'17 ...	37½	38½	38½	39½	40	..

Rcts. wk. ending July 22, 389,400 lbs.

CHEESE

Dairy Exchange quotations:
Cal. Flats .....24½@26½
Ore. Y. Am. 26
Jack Cheese, full cream 26

EGGS

Dairy Exchange Quotations:
Extras 48
Firsts 45½
Selected Pullets 46
Firsts 44

Prices Extra past wk. and yr. ago:

July	16	17	18	19	20	22
'18 ...	47½	48	47½	47	47	48
'17 ...	33½	32½	32½	33	34	..

Rcts. wk. ending July 22, 9352 cases.

POULTRY

We quote to producers, lb.:
Per lb.: Large hens, 28@30; small do, 25@26; medium, 26@27; broilers and fryers, ¾ to 1 lb., 37@38; 1½ to 3 lbs., 35; young colored stock, over 3 lbs., 38; old roosters, 19@20; ducks, lb., 22@28.
Squabs, doz. .....2.50@4.00
Belgian Hares, live, lb. .....15@18

LIVESTOCK

Prices gross weight:
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.
Steers, lb., 10@12; thin, 8@9; cows and heifers, 7@8¼; thin, 4@5½; calves, 7½@11.
Sheep—Per lb. gross weight: Unshorn wethers, 11@11½; ewes, 9½@10; lambs, yearlings, 12@12½; milk, 14@14½.
Hogs—Hard grain fed, weighing 100 to 140 lbs., 16½@16¾; 140 to 300 lbs., 16¼; 300 to 400 lbs, 16¼.

POTATOES

Wholesale selling prices at wharf, cwt.:
River, new, cwt. .....2.40@2.75

ONIONS

Wholesale selling price on wharf, cwt.:
Garlic, new, lb. .....9@10
New Red, sk. .....1.50@1.75
Clarksburg, sk. .....1.90@2.15

VEGETABLES

Wholesale selling price:
Beets, sk. .....75@1.00
Beans, String, lb. .....4@6
Limas, lb. .....5@7
Garden .....9@11
Beets, new, sk. .....1.50@1.65
Corn, green, sk. .....3.00@3.25
Cucumbers, lug .....1.25@1.50
Egg Plant, lug .....1.50@1.75
Lettuce, doz. .....15@20
Okra, bx. .....75@1.00
Onions, green, bx. .....65@75
Peppers, Bell, lug. 1.00@1.25; Chili .....5@6
Peas, lb. .....10@11
Rhubarb, bx. .....1.00@1.25
Squash, Summer, lug .....75@1.00
Italian, lug .....50@75
Spinach, cr. .....50@75
Tomatoes, bx. .....50@75
Turnips, new, sk. .....65@75

FRESH FRUITS

Apples, Gravenstein .....2.00@3.00
Red Astrachan .....1.75@2.50
Apricots, small lug .....1.00@1.25
Bananas, lb. .....7@7½
Berries—Pr. ch.: Strawberries, ch. 7.00@9.00; blackberries, 7.00@11.00; loganberries, 6.00@7.00; raspberries, 7.00@9.00.
gooseberries, lb., 6; English, 10@15.
Cantaloupes — Ponies, 1.50@1.75 standard, 1.75@2.50; flats, 75@1.00; Turlock ponies, 2.50@2.75; standards, 3.00@3.25.
Figs, bx.: Mission, double layer .....1.00@1.35
Grapes, Seedless .....2.25@2.50
Malaga .....2.00@2.25
Fontainebleu .....90@1.00
Huckleberries, lb. .....18@21
Peaches, cr. .....1.00@1.25
Pears, green sugar, cr. 75
Plums—Bx., Burbank, 75@1.00; Climax, 85@1.15; Wickson, 1.00@1.25; Tragedy, 85@1.25; Santa Rosa, 1.25@1.50; loose packed, bx., 50@75.
Pineapples, doz. .....4.50@5.00
Watermelon, lb. .....1½@2

CITRUS

Lemons, bx., fy., 7.00@7.75; ch, 5.00@6.00; standard, 4.00@5.00; lemonettes, 4.00@6.00; oranges, fy., 6.50@6.75; ch., 6.00@6.25; grapefruit, 3.00@4.00.

BEANS

Jobbers' prices, cwt., recleaned:
Limas .....11.90@12.00
Bayous .....8.00@8.25
Small Whites .....Nominal
Large Whites .....Nominal
Mexican Reds .....8.00@8.25
Blackeyes .....7.25@7.50
Pinks .....6.90@7.00
Red Kidney .....11.75@12.00
Cranberry .....Nominal
Teparies .....8.50@8.75

DRIED FRUITS

Raisins: Associated prices 1918 are:
Muscats: Packages seeded, fancy, 36-16s, 9.625; fancy, 48-12s, 7.75; choice, 36-16s, 9.125; choice, 48-12s, 7.375. Bulk seeded: 25-lb. Bakers, 8.00; 25-lb. fancy, 8.85.
cleaned, 48-16s to case, 9.00; bulk, recleaned, 36-12s to case, 8.00; package, recleaned, 48-16s to cast, 9.00; bulk, recleaned, 25-lb. boxes, 9.25. Sulphur bleached—northern stock: Bulk, 25-lb. boxes, choice, 10¾; bulk, 25-lb. boxes, fancy, 10¾; bulk, 25-lb. boxes, extra fancy, 11¼. Soda dipped — northern stock—Bulk, 25-lb. boxes, 10.
Sultanas. Packages, recleaned, 48-16s to case, 9.65; bulk, recleaned, 25-lb. boxes, 9.00.
Peaches — California Peach Growers quotes opening prices for 1918 crop f. o. b. factories California. Prices guaranteed to December 31.
Bulk basis and boxes unfaced 1 and 2 cents more.

	Practically Peeled	Yellows (Old style)	Muirs (Old style)
Standard	12⅞c	11¼c	11⅜c
Choice	13⅜c	11¾c	11⅞c
Fancy	14⅜c	12½c	12⅞c
Ex. Fancy	15½c	13¼c	14c
Slabs		10¼c	

Prunes and Apricots. The Prune and Apricot Growers' Association have named following prices on apricots:
Standards 9½
Choice 13
Extra Choice 14½
Fancy 16
Extra Fancy 17½
Extra Moorparks 19
Slabs 11

Cash on delivery price on all grades will be 8 cents with the exception of standards and slabs on which it will be 6 cents.

Prunes: The government will take all the 50-60; 60-70; 70-80 sizes. The quotations sent to the trade last night are as follows:

The bulk prices will be:

Sizes:	Price per lb.
20-30	17
30-40	10¾
40-50	10
50-60	9
60-70	9
70-80	8¾
80-90	8¼
90-100	7¾
100-120	4¾
Above 120	4¼

One cent per pound, and one and one-fourth cents per pound will be added for 50 and 25-lb. boxes.

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....15@18
Amber extracted .....12@14
White Comb, cs. 4.50
Light amber comb, cs. .....3.50@4.00
Beeswax .....36@40

HAY

Under date of July 20, Scott, Magner & Miller says:
Receipts past week 3234 tons, last week 2139 tons. This large increase in receipts was to be expected as baling operations have been in progress for some time. A great deal of this hay has had to be hauled into dealers' warehouses, and they are fast becoming filled, whereas a short time ago it was difficult to keep them from being empty.
Consumers have held back awaiting concessions in prices, which they claim have been out of reason, and have only been buying in a small way for requirements. Receipts of alfalfa for this time of the year have been lighter than usual, although more of this commodity arrived during the latter part of the week than for some time past. There has been a good demand, with the supply fully up to all requirements. The second cutting river hay has started to arrive and is given preference over the interior articles as usual.
We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market — for prices to consumers charges of cartage, commission and handling must be added according to conditions:
Fancy Wheat Hay, large 5 wire bale .....26.00@27.00
No. 1 Wheat or Wheat and Oat Hay .....22.00@24.00
No. 2 Wheat or Wheat and Oat Hay .....19.00@21.00
Choice Tame Oat Hay .....24.00@26.00
Other Tame Oat Hay .....21.00@23.00
Wild Oat Hay .....18.00@22.00
Barley Hay .....18.00@22.00
Alfalfa, first cutting .....16.00@20.00
Alfalfa, second cutting .....22.00@24.00
Stock Hay .....17.00@19.00
No. 1 Barley Straw, bale .....50@80

GRAIN

Wheat—Government prices: Common white hard, base price, $3.50 per cental, or $2.10 per bushel of 60 pounds delivered in terminal warehouses in bulk; soft white, base prices, two cents per bushel less, or $2.08 per bushel; white club (including Sonora), $2.00 per bushel. If wheat, after cleaning, weighs 60 pounds or more to bushel, base price stands; if 58 to 60 pounds to bushel, three cents per bushel reduction; if 56 to 57 pounds six cents per bushel less; if less than 56 pounds, grain becomes sample grain and sells on its merits up to within one cent per bushel of 56-pound wheat. Additional charge made for sacks.

SEEDS

Prices in round lots, lb.:
Millet, recleaned .....5@5½
Alfalfa, lb. .....20@21
Flax .....7@7½
Hemp .....5@5½
Rape .....2½@3

Citrus Fruit Market

Los Angeles, July 24, 1918.

California grapefruit seems to have come to its own and many sales are being made around the $5.00 and $6.00 mark.

Oranges are again approaching spectacular prices and many auction sales have been made around $8.00.

Lemons are likewise stronger notwithstanding cargos of Mediterraneans are being received. There is a keen demand however, for high quality California lemons.

Shipments

Shipments of citrus fruits to date since November 1, 1917: Southern California; oranges 12,123, cars, lemons 4290, total 16,413. To same date last season oranges 34,209, lemons 6519, total 40,728. Central California this season; oranges 2536, lemons 115, total 2650. Last season to same date; oranges 4655, lemons 164, total 4819. Northern California; oranges 203, last year same date, 845.

AT THE AUCTIONS

July 17

New York: Val. $4.30-7.95, lem. 4.10-6.35.
Boston: Val. 5.40-7.60, lem, 4.80-6.95.
St. Louis: Oranges higher. Val. 3.00-6.60, lem, 2.30-4.15.

July 18

New York: 9 oranges, 7 lem. Oranges higher, lem. lower. Val. 4.15-7.85, lem. 2.35-6.20.
Boston: Val. 5.95-6.30, lem. 4.10-6.10.
Philadelphia: Val. 5.40-7.80, lem. 2.90-5.10.

July 19

New York: Orange market strong, lemons easy with only best grade in good demand. Fifty-five thousand cargo Mediterraneans today. Val. 4.15-7.50, grapefruit 6.00-6.75, lem. 3.45-6.25.
St. Louis: Val. 1.95-5.55, lem. 1.55-4.75.
Cleveland: Val. 5.15-6.65, lem. 2.50-6.05.
Boston: Val. 5.50-6.25, lem. 5.35-6.20, grapefruit 5.80.

July 22

New York: Oranges higher. Val. 6.00-8.65, grapefruit 4.75-6.85, lem. 4.15-6.90.
Philadelphia: Oranges higher, lemons firm. Val. 4.80-7.95, lem. 4.45-6.75.
Boston: Val. 4.50-6.60, lem. 5.80-7.20.
St. Louis: 3 lem. 2 oranges. Val. 4.25-6.65, lem. 2.95-5.25.

July 23

New York: 7 oranges, 1 grapefruit, 6 lemons. Higher. Val. 5.45-7.90, lem. 5.15-7.35.
Philadelphia: Val. 7.35-7.75, lem. 7.15-7.65.
Boston: Val. 4.90-6.80, lem. 5.40-6.80.

PARTIAL LIST CALIFORNIA FRUIT AND VEGETABLE SHIPMENTS

From post card reports to the Los Angeles branch of the bureau of markets, United States department of agriculture, report is made of the following shipment of cars of products from California for the week ending July 22: Apples, 4; apricots, 109; blackberries, 1; cabbage, 4; cantaloupes, 65; carrots, 3; cherries, 1; dried apricots, 10; dried beans, 6; dried peaches, 1; dried peas, 1; dried prunes, 7; garlic, 2; grapes, 44; lettuce, 2; loganberries, 21; mixed fruit, 23; mixed vegetables, 34; mixed fruit and vegetables, 12; mixed dried, 1; onions, 58; peaches, 17; pears, 290; plums, 240; potatoes, 545; raisins, 92; tomatoes, 38; watermelons, 54; Arizona cantaloupes, 388; Arizona watermelons, 5; Nevada Cantaloupes, 5.

MARKET NOTES

California is shipping largely of potatoes to the Eastern markets; this is causing slight shortage and better local conditions. However, there have been vast quantities of low grade stock.

Imperial Valley is now shipping out Malaga grapes which have been selling around seven and eight cents a pound.

Fresh apricot supplies are decreasing rapidly and prices are advancing.

Imperial Valley has closed its cantaloupe season with larger shipments than last year. Arizona and Colorado are now supplying the Eastern market. The Turlock district is not expected to reach its highest production until well into August.

California garlic crop will be materially short, largely due to the spring drouth, and the acreage is about 75 per cent of last year. The yield will not be 60 per cent of normal. There are occasional carload shipments. The growers are receiving 69 cents.

Dried fruit packing and shipping is almost swamping some of the shipping organizations. Last year's prune and peach crop is practically cleaned up and this is inducing more general purchasing of this season's dried crops.

Beans are still in the dumps, and holders of last year's crop find it almost impossible to sell.

The public service of the state of Washington has filed complaint with the interstate commerce commission asking a review of recent freight rates which concern the fruit growers of the Northwest. The increase if it stands, will require an additional payment of two and a half million dollars on this fall's fruit shipments.

Michigan finds its peach crop materially reduced because of severe winter conditions which injured many of the trees. In some sections fully 90 per cent of the trees were winter killed.

The recently announced raisin prices indicate about one cent higher price will be obtained than last year. The bulk Muscat seeded will bring 7½ to 8¾ cents, three crown bringing 8 cents or a 5½ cent price to grower. 1918 dried peaches f. o. b. common shipping points. Fancy Yelows 12½; Muirs 12 7-8; peeled 14 3-8, for box unfaced add one to two cents. California Peach Growers' guarantee prices till December 31. The prices represent an increase of about three cents per pound.

American Grown Egyptian Cotton Saves Shipping Space

When the war trade board announced the revocation of all outstanding licenses for the importation of Egyptian cotton and that importation of only 80,000 bales of long staple Egyptian cotton will be allowed during 1918, attention was called to the increase in the production of Egyptian cotton in the irrigated lands of Arizona and neighboring states. The production in 1918 of this American grown Egyptian cotton, according to specialists of the United States department of agriculture, probably will be between 40,000 and 50,000 bales. In 1917 the production was 16,000 bales, and in 1916, 3,331 bales. The acreage this year is estimated at 80,000, compared with an acreage of 35,000 in 1917. Egyptian cotton is used largely for automobile tires and high-grade sewing thread, and spinning tests by the bureau of markets of the department indicate that it can be used advantageously in the manufacture of airplane and balloon fabrics. Commercial production of Egyptian cotton in the American southwest was begun only in 1912, after long experimentation by the bureau of plant industry, but already the industry has grown to such an extent that imports can be cut to 80,000 bales, thus saving a great amount of cargo space on the long water haul from the land of the sphinx.

Dependability of Tractors

Of more than 600 tractor owners on representative farms in Illinois who reported in a recent survey conducted by the United States department of agriculture, a report of which is published as Farmers' Bulletin 963, 54 per cent stated that their outfits were not disabled a single day when needed during the entire season last year. Of the remaining 46 per cent the average number of days their tractors were out of commission when needed was five. This average, however, did not include one man who stated that his machine was not usable about half the time.

The reports of tractor owners indicate that with a careful and proficient operator a gas tractor is a very dependable source of power. Occasional slight delays probably will be encountered, but serious ones will be exceptional, whereas with a careless or incompetent operator expensive delays are apt to be frequent.

About 90 per cent of the tractors were operated by the owner or some member of his family, the best results usually being obtained by this class of operators. Thirty-six per cent of Illinois owners reported no time lost in the field on account of trouble with the outfit. This probably means that the time lost was not worth mentioning. Most men do not consider it trouble so long as they know at once the cause of stoppage or other irregularity in the engine's operation, and are able to remedy it promptly. The average time lost per day by the 46 per cent reporting trouble is a little over three-quarters of an hour.

Wagon-Box Lining to Save Grain

In support of the nation wide effort to prevent waste of food, Frank Svoboda, a Bohemian farmer living in Oklahoma, urges cloth or canvas linings for wagon boxes during threshing and grain handling seasons. "From 25 to 50 bushels of wheat could be saved daily on the average farm at the time of threshing," Mr. Svoboda believes, "if such lining were used in the bottom of every wagon to keep grain from sifting through the openings. Few farm wagons used for hauling bundles are grain tight. Canvas cloth should also be used at the threshing machine when the bundles are unloaded. Especially when the season is dry and kernels of wheat drop from the stalk upon mere touching, large quantities of grain are lost in hauling wheat from the field to the machine and during threshing operations."

This suggestion reached Washington, where it secured the hearty endorsement of the United States food administration.

Hoarding

What is hoarding?

Storing away more than the food supplies needed for a reasonable length of time.

Why do people hoard?

Because they fear that a shortage is coming and wish to protect themselves, even though it be at the expense of others.

What are some of the evil effects of hoarding?

It raises prices; it imposes a heavier burden on those already doing their utmost; it throws out of joint the distribution system; it results in waste where there are no proper facilities for storing.

What is the moral wrong of hoarding?

It is selfish, cowardly, unpatriotic.

Why is hoarding unnecessary?

Because the government is protecting the food supply.

Is there any law against hoarding?

Yes. In the Food Control Act.

Is there any punishment for hoarders?

Yes. The Food Control Act provides fines of not more than $5,000 and imprisonment for hoarding of food by dealers, manufacturers, or householders.

How is the dealer punished for hoarding?

His license is revoked.

RANGE CATTLE IMPROVEMENT

There is great activity among the stockmen of Northern California in range cattle improvement. The Northern California Cattlemen's Associations are particularly active in this. Some of the best registered bulls produced in California are being used on these northern ranges—and many are being imported from the Eastern states.

WEATHER CONDITIONS

San Francisco, Cal., July 20, 1918.

Stations	Rainfall Wk.	Rainfall Season.	Rainfall Norm.	Temp. Max.	Temp. Min.
Eureka	.12	.14	.11	68	48
Red Bluff	.00	.00	.00	96	58
Sacramento	.00	.00	.00	96	52
San Francisco	.00	.00	.01	74	52
San Jose	.00	.00	.00	88	48
Fresno	.00	.00	.00	98	62
San Luis Obispo	.00	.00	.01	86	52
Los Angeles	.00	.08	.00	90	60
San Diego	.00	.00	.00	78	62

A HARD LIFE

A soldier in the English army wrote home: "They put me in barracks; they took away my clothes and put me in khaki; they took away my name and made me 'No. 575'; they took me to church where I'd never been before and made me listen to a sermon for forty minutes. Then the parson said: 'No. 575, art thou weary, art thou languid?' and I got seven days in the guardhouse because I answered that I certainly was."

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115-117 N. Broadway - . Los Angeles, Cal.

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.....

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to Name .....

Address .....

Occupation .....

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — August 3, 1918 — No. 5

Busy Days in the Small Ranch Dry Yard

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

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Saturday, Aug. 3, 1918

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THIS WEEK'S COVER

There are thousands of busy fruit yard scenes, such as is depicted in the photograph on the cover of this issue, all over California. In addition there are hundreds of larger plants where hundreds of tons of fruit are cured. A keen demand is already taking these fruits from these yards and placing them in the markets of the world. There has been a bit of hesitancy on the part of the market as to apricots and some other most desirable products, but the situation is being cleared.

SUGAR SHORT

Later estimates indicate a most serious shortage of the present season's sugar production. It now appears that only in isolated cases will there be any material increase, and in many sections like California a very great reduction will be made. It may be recalled that in the long dispute between grower and manufacturer the food administration was called in and failed utterly. Later a commission was appointed to investigate and bring warring elements together. Growers were willing to produce more beets if a fair price were named, but the commission appointed was unable to produce its report in time to enable the growers to plant, and in addition the recommended price was not at all attractive. The growers were not slackers for they were simply demanding fair treatment. It is to be hoped an effort may be made before too late this coming year to make adjustments which will permit growers of California to produce sugar to the limit.

COTTON

The cotton grower is observing with some degree of concern the depreciation in the cotton market, or rather the situation foreshadowed when the new crop comes on. Presumably there will be no more cotton than will be needed, but the production will be immense, and the department of agriculture is taking a hand in the matter and endeavoring to stabilize the market. One suggestion has been that every grower consent to hold and store at least two bales out of every ten. In addition, let every grower market in installments, month by month. Assistant Secretary Ousley says:

"It is an old saying that the average cotton farmer will not sell when prices are advancing and will not hold when prices are declining. From what I have learned during the last few weeks I am inclined to the view that the cotton farmers today are resolved and are prepared to pursue a more rational course. I find little evidence that the actual farmer is the least panicky over the cotton situation. He remembers the sad experience of 1914 when we brought a big crop to market just after the world war broke out, and because there was then more cotton than could be sold and delivered, we fell into hysterics and sacrificed a large part of it below cost of cultivation. If we had been wiser then, we would have retired a small part of the crop and sold the greater part of it at fair prices because, as a matter of fact, we had to hold a small part and ultimately we absorbed it in the reduced crops of the three succeeding years.

"Some people seem to have the notion that the situation now is as serious as it was in 1914. It does not so appear to me. But even if it were, if we will only profit by the experience of 1914 we can easily solve the problem."

DOING OUR SHARE

All who are following closely reports of action at the front often note that a trivial incident, or a lack of proper support at some one point of the line, may make great difference in results. War in modern times is wonderfully complex, and the boys in the trenches who are bearing the brunt of the fight sometimes appear to have only a small part in the final determination. No matter how true to their trust, nor how brave, our support thousands of miles away must be complete. The food administration is appealing for fullest support from every true American.

The food program is a fighting program. We here in this country have the education, we have the brains, we have the loyalty. We must live up to our privilege of backing up our splendid men who represent us in the army and navy. Let each of us live so each day that when our boys come back from France we can look them in the eye and say: "I did my share and all that I could do at home."

KEEP YOUR GRIP

The daily press during the past week has been filled with most cheering information. Mile after mile the Huns have been driven back. As we go to press a countercharge is being made by German troops, estimated to exceed 500,000, on a comparatively short sector. We believe our boys will hold them, but if the Allies are pushed back it will only be temporary. We are reminded of a motto which has prominent place in the office of the shipping board in Washington: "Noah was 600 years old before he knew how to build an ark. Don't lose your grip."

BILLION

The size of a billion is appreciated a little better when we stop to consider that Uncle Sam will pay out $45,000,000 every year for interest at four and a half per cent on each billion borrowed. During the past year the total war cost has been about 26 billions. Of course a part of this has been raised on Liberty Bonds; some by direct taxation. Another year a greater proportion must be raised by taxes; to that end congress is wrestling with a tax scheme for the coming fiscal year.

It is hardly probable that any tax law can be devised that will be entirely just to all, but there must be less of favor shown to great incomes; the excess profits tax was outlined a year ago so as to be far more just to people with small incomes. Millions were being made for holders of "war brides," and the bill was planned so as to take some of these excess profits. It was so modified, however, that the greater proportion of these immense profits are held by large operators. About one and a half per cent of the families in the United States received 12 per cent of the national income, or around eight billion dollars. Now comes the Farmers' National Committee and recommends that where any income exceeds $50,000, all excess over that sum shall be taken by the government. This committee estimates that a tax of 80 per cent on the excess war profits will yield this year at least four and a half billions.

This matter of taxation is a long one and so far as possible must be just, and to be just must lift or rather reduce the burden of small incomes and reduce the swollen fortunes being made.

This Week's War Notes

The state department is contemplating giving approval to a loan of $50,000,000 to China, the $50,000,000 to be used in strengthening China's frontiers.

One Los Angeles concern has signed a contract with the naval construction board for marine engines to the value of $4,000,000.

German newspapers report that King Ferdinand of Bulgaria has gone to foreign lands on account of his health.

Reports from China indicate that the Czecho-Slovaks, who are operating with the Allies in Siberia, are advancing but are in great need of reinforcements from the Allies.

The strike in British munition works has been largely brought under control. The government served notice that the strikers might return to work or be sent to the trenches.

Finland seems to have become the absolute vassal of Germany. It is anticipated that Germany plans using Finland in its scheme to secure entire control of Russia.

Hotels, restaurants and those who have given voluntary pledges to abstain from all wheat have been released by the food administration. The half and half rule will still obtain in the purchasing of flour.

Germans are in entire control of the grain field section of Southern Russia, and where peasants have deserted their fields German soldiers are harvesting the wheat and shipping direct to Berlin.

The efficiency of American, French and British flying machines is being demonstrated. One day's actions are reported in which 11 tons of bombs were dropped on enemy's ammunition dumps and supply stores.

The chief of staff of the Japanese imperial army has wired General March congratulations and expresses great admiration for the work of the American army on the French battlefield.

It has been known for some time that relations between Turkey and Germany were somewhat strained and on Tuesday of this week definite announcement came: "The relations between Germany and Turkey have been severed."

The Red Cross reports great need of attention to be given to Russian prisoners returning from Germany. They have been starved and are almost invariably afflicted with tuberculosis. The United States government has approved liberal shipments of food.

The United States treasury has extended additional credits of $100,000,000 to Italy and $9,000,000 to Belgium. This increases credits extended to Belgium to $145,250,000; to Italy to $760,000,000. Total loans of this country to Allies, $6,380,040,000. Advances are now averaging about $400,000,000 a month.

The Pacific Coast has been honored by being given the first exhibit of war trophies. This exhibit is of various war appliances, many of them captured by General Haig in the great drive near Lens. There are 17 carloads of exhibits which were opened in San Francisco and are now being exhibited in Los Angeles.

Because so many boys under 18 have secured entrance to the service on making statement that they were 18 or above and later have had to be discharged on request of their parents, with proof of under age, the war department has ruled that hereafter every minor enlisting must furnish proof that he is 18 years of age.

American boys are making good. It has been a week of French and American victories, and every day has shown the hardest fighting of the war. The Teuton lines have been pushed back from the Marne over the Ourcq. Fere en Tardenois, one of the large supply bases of the Germans, has been captured. Soissons is threatened, but is still held by the Germans. The enemy has been pressed back from ten to 15 miles. His resistance became more strenuous Tuesday when vast reserves were apparently thrown into the battle line. Captured German soldiers are nearly all wearing new and flashy uniforms, indicating that the Germans have been preparing for triumphal entry to Paris. This recalls the fact that at the time of the first battle of the Marne in 1914 a full trainload of banners, tinsel and trappings was captured by the French troops. It was then supposed to have been prepared for the entry of Paris at that time. The British have made light attacks along the line in Picardy, but as a rule the northern end of the battle line has been very quiet. The principal advance has been from the Marne northward and between Rheims and Soissons. However, the line south of Rheims has been advanced in favor of the Allies.

The Washington Navel Drop in 1918

By Robert W. Hodgson

NOW that the June drop is practically over, an analysis of the phenomenon as it occurred this season may help to clear up some difficulties in the minds of growers.

In the first place, quite generally throughout the state the amount of bloom was much heavier than is normally the case. Usually the amount of bloom increases the farther inland the district, but this last spring uniformly all over the citrus sections the trees bore a very heavy bloom. The cause is not definitely known but probably it has to do with the vigorous condition of the trees following the light crop of last season.

In the second place, the proportion of flowers which "set" as compared to what it normally is in Southern California was small. By far the greater part of the young fruits were shed while still in the flower stage. This was to be expected on account of the extremely heavy bloom. It was physically impossible for the trees to carry to maturity anything like the number of flowers borne. Moreover a certain proportion of navel flowers are not capable of development but must be shed because of lack of a normal ovary. Naturally the heavier the bloom the greater the number of imperfect flowers. Nevertheless the number of blossoms which did "set" was enough to make crop prospects very bright and the May estimate for the orange crop was between 95 and 98 per cent.

In the third place, the June drop was late this season and did not take place in May or early June as it usually does, but commenced late in June and has continued until the middle of July. The average size of the shed fruits has been unusually large this season and practically all of the "dropped" fruits abscissed at the base of the ovary leaving the stem and button on the tree.

In the fourth place the weather in Southern California this season has been characterized by moderate temperatures and high atmospheric humidity. It has not been excessively dry nor excessively hot and still the drop has been quite severe especially in certain sections.

Some citrus growers are now estimating the crop at not more than 50 per cent. Nevertheless the fact remains that the crop varies markedly in different sections, being much heavier in Los Angeles and Orange Counties than in Riverside or San Bernardino and other interior counties. The question of what is regarded as a normal crop is hard of determination for the reason that certain sections "normally" bear more than others, probably largely on account of climatic differences. Certain it is that growers in certain localities of the interior counties in general would do little complaining if they could see as much fruit on their trees as is now on most of the trees in some of the coast counties.

Nevertheless there is a general complaint that there has been a heavy drop all over the state and the question in the minds of many growers is as to what caused the heavy dropping of the fruits during the last month. It can hardly be attributed to hot, dry weather, at least in Southern California, for as stated above we have had no such weather, until quite recently. The answer to this question is that apparently the heavy shedding in the last month is due to the fungus Alternaria. Practically all of the fruits shed during that period if cut open will exhibit a dark, discolored area under the navel end which usually indicates Alternaria infection. In Bulletin 290 of the Experiment Station it was pointed out that most of the late shedding, involving fruits of an inch or so in diameter, is associated with infection by Alternaria citri, which also causes black rot in those oranges which manage to hang on the tree to maturity. It was stated that ordinarily this part of the drop is of relatively little importance but that Alternaria infection was large in 1916. Climatic conditions this last spring have been very favorable for Alternaria infection and apparently we are having another season similar to that of 1916 but even more propitious for the growth of the fungus.

Citrus Trees With Heavy Green Manure Crop

Green manure crop planting time will be here within a few weeks. Besides affording humus, green manure crops have cover crop value.

So far nothing is known concerning methods of combating this fungus. The probable nature of infection either through the style of the fruit or by way of the ragged navel end after the style is shed, makes control by spraying of doubtful effectiveness. Cooperative spraying experiments carried out last season have shown no measurable effects, although it should be stated that the 1917 season was not favorable for Alternaria.

Summer Cover Crops

The writer recently made a trip through Kern and Los Angeles Counties checking up on the results obtained by the use of summer cover crops. He is very glad indeed to report that in Kern County, where the June drop occurs every year and is usually due to harsh climatic conditions, in every case observed where summer cover crops were put in and cared for properly the crop this season will be at least twice what it normally is. In some cases the increase will be even greater, as much as three times a normal crop, whereas where no summer cover crop was grown prospects are no better than last year. The most satisfactory cover crop used seemed to be a mixture of 12 pounds Melilotus alba and six pounds vetch planted in February. The indications were that the melilotus alone would have been better. A number of citrus growers in Los Angeles County planted summer cover crops of buckwheat this spring in April. Although weather conditions in Southern California and in Los Angeles County in particular were not conducive to a water-relations drop this season, still in every case observed where the cover crop was put in right and properly irrigated the amount of fruit on the trees will average higher than that on adjoining areas. Notice the fact that the word average is used. There are some groves without a summer cover crop which have been well cared for and fertilized and which aparently have about as much fruit. But the average, other conditions being equal, is in favor of the orchards with the summer cover crop.

But by a summer cover crop the writer does not mean a crop of Blackeye beans or Lady Washingtons planted in May or June. He means a thick growing crop planted so as to be up and covering the ground somewhat by the early part of May.

Extra Water Necessary

No occasion should be lost to give a word of caution concerning the growing of summer cover crops for the control of the June drop. The grower must have enough water for both crops and be able to apply it as often as needed. This means he probably will need at least four miners' inches for each ten acres. In addition the crop must be planted as early as possible in order to get it up and covering the ground before hot weather sets in. Since the water supply in Southern California is limited and the cost high, it may not be and probably will not be possible to grow summer cover crops in certain sections. However, the grower can accomplish a good deal toward obtaining good crops by keeping up his soil fertility. It has been repeatedly demonstrated that plants on a poor soil will require considerably more water than plants on a soil where the fertility has been maintained. The trees must not be allowed to suffer for water and one way to prevent this is to keep their water requirements as low as possible by maintaining the fertility of the soil. Of course summer cover crops may be expected to have no effect in preventing the Alternaria drop.

Some effort has been made to assign the shedding of lemons and Valencia oranges to the same causes operative in causing the June drop of navel oranges. The writer cannot bring himself to agree entirely with this idea, but recognizes the navel orange as in a class peculiar to itself. The navel orange variety is one of the most unstable and erratic fruit varieties we have. It is extremely prone to bud mutation and gives rise very freely to teratological forms. In fact the fruit itself is a monstrosity, consisting of a secondary fruit, the navel, partially enclosed within the primary seedless fruit. Moreover it possesses some indications of hybrid origin among which are lack of viable pollen, degeneration of a large proportion of the ovules, and susceptibility to shedding of the flowers and young fruits.

Lemons and Valencia oranges ordinarily possess some seeds whereas the navel is practically always seedless. There is a belief among growers, based on how much fact we do not know, that the shedding of such fruits is largely confined to those possessing few or no seeds. Heinicke of Cornell has shown that such is the case with the June drop of apples. There are a few navel trees of a different strain from the Washington navel which normally do produce some fruits containing seed. There is some evidence to show that in the case of these trees shedding is largely confined to the seedless fruits, the fruits containing seed remaining to maturity. But be that as it may, the fact remains that the Valencia crop of last season was about 65 per cent compared to 15-20 per cent for the navel, while the seedling crop is estimated at 100 per cent. Moreover in the laboratories of the division of agriculture the writer has shown that when subjected to precisely the same stimulus, navel flowers are shed in 48 hours, Valencia in 72 hours, and Eureka lemon in 144 hours, showing a great difference in susceptibility to the same abscission stimuli.

It is needless to say that trees which have been neglected or which are diseased cannot normally be expected to set a satisfactory crop. However, in orchards where the best of care is given and the trees are strong and thrifty, this June drop phenomenon occurs and it is this phase of the June drop which is referred to in this article.

BLACK BEETLE, FRIEND OF BEAN GROWERS

Cheering news for bean growers of Ventura County comes in the announcement by County Horticultural Commissioner A. A. Brock that he has discovered a black beetle which is feasting on the corn worm, which has been doing such serious damage in the bean fields.

"The beetle," says Mr. Brock, "multiplies rapidly, and is present in many of the fields now suffering from the worm." Hundreds of lanterns, forming moth traps below which the moths drown in a pan of oil, are burning every night throughout the county. Some sections look as if illumined for a fete. Spraying is only partially successful, as the worms are in the pods, which lie on the ground and are so covered by the beavy foliage that the spray does not reach them.

After all, the great mass of the people are sane and steady. Only a few at each extreme are making the troublesome noise.

Agricultural News Notes of the Pacific Coast

Northern California

Gridley has been shipping peaches, Tuscan clings. Growers are getting $50 a ton.

Prospects are good for a big rice crop in the tule district of northeastern Yolo.

The old Griffin-Skelley packing house at Chico is being remodeled to be used for packing prunes and peaches.

Sutter County reports "most of the prunes in this locality sold"; "dried Muir peaches, top price 11 cents per pound."

Chico reports the present year's output of prunes will be the biggest ever for that district; it will be not far from 3,000 tons.

Lincoln, Placer County, reports grain being brought in at the rate of 750 bags a day. That vicinity will furnish 50,000 bags.

Owing to irrigation water being shorter than usual, many Sacramento Valley people who are situated so they can will grow fall potato crop.

The weather bureau is aiding in fire patrol work by sending out to post offices notices immediately upon the discovery that a north wind is coming.

The Women's Liberty League of Yolo County has started a food conservation campaign in the nature of practical vegetable drying demonstrations.

Sutter County reports the peach crop ripening slowly on account of cool weather. A few clings have been marketed but other varieties are not ready.

C. C. Moore, recently elected member of the council of defense, is soon to name a committee of farmers and stockmen to promote a straw conservation campaign.

Glenn County farm bureau meetings: Larkin, July 26; Bayliss, August 2; Ord, 7; Jacinto, 9; Codora, 12; Orland, 14; directors' monthly meeting held at Willows last Saturday.

California rice growers have agreed to submit price adjustment to State Food Commissioner Merritt, notwithstanding they feel the situation favors the rice growers of the Southern States.

Due to the concerted action of the government the state foresters and the weather bureaus, the number of fires in the grain fields of California have been reduced 50 per cent this season.

Farm Adviser Stiles of Sutter County with a party of other agriculturists recently visited the big new grain elevator at Hamilton City, Glenn County. The elevator has capacity of 60,000 sacks.

Members of the Placer County farm bureau have organized The Farmer Lime Company, which announces that it will have pulverized limestone ready for delivery on August 1. Price announced is $2.25 per ton at quarry, or, delivered, 25 cents per ton mile, on board cars Newcastle, $4.00.

As a result of a final conference between the directors of the Pacific Rice Growers' Association and the federal food administration, California rice growers will receive a maximum of $4.32 per 100 pounds, instead of $4.16 2-3 as originally provided in the agreement the association was requested to sign.

Central California

Grasshoppers have damaged the grain crops in Merced County.

Active buying of raisins, prunes and peaches is reported from the valley.

Growers are to get 6¾ cents for Thompson Seedless, 5½c for Muscats.

Fruit growers and shippers met in Lodi July 20 to discuss problems of standardization of pack.

The Alfalfa Growers' Association is now conducting a membership campaign in Merced County.

The army worm which was seriously threatening vineyards in Tulare County has disappeared.

The food administration has announced the retail price on rice at approximately 11 cents.

Berry men of Santa Cruz County are considering discarding chests and adopting free containers.

More than 5000 acres of alfalfa land in Tulare County have been pledged to the Alfalfa Growers Association.

The San Joaquin Valley Dairy Producers' Association held a meeting in Merced, July 27, to secure members.

A sale of 164 hogs was made by the Tulare County farm bureau July 18. Fifteen and one-half cents per pound was received.

Monterey County cattlemen are contemplating a scheme of chain cattle sales; this for both feeders and fat stock.

The food administration has requested canneries not to admit visitors to any part of factory where food products are being packed.

It is reported that Chinese pheasants are playing havoc in melon and vegetable patches of the Westfield district of Tulare County.

Mrs. Ruby Nickerson, a rancher near Merced, has arranged for a unit of 20 young women of the Women's Land Army to harvest her fruit.

The farm home department of the San Joaquin County farm bureau has 231 members in Lodi, 36 in Escalon, 25 in Manteca, and 14 in Lockeford.

Farm Adviser Jungerman of Stanislaus County is endeavoring to interest the farmers in pooling their wool clips for sale to the government.

Mrs. J. L. Carver of Tulare County has disposed of her cattle ranch in the White River foothills of which she has maintained personal management for many years.

Pear growers are relieved over securing an increase in their contract price. Ten dollars will be added where this does not bring the new price over $47.50 per ton.

Grain fields in the Tulare section were fired in a very peculiar manner last week by the dropping into the dry fields of the blazing bodies of birds which flew into high tension wires.

Land owners in the west side section of Merced, Stanislaus and Fresno Counties are petitioning for the formation of a great irrigation district to include a half million acres.

Dr. Kelly of the University of California has been sent to the Tulare citrus district to study cultural methods. The expense of conducting the work will be borne jointly by the university and the orange growers.

Southern California

Liquid hydrocyanic acid gas fumigation is growing in popularity.

Apricot pits are commanding $45 per ton; kernels eight cents per pound.

Los Angeles County farm bureau center meetings; Lankershim, August 1; Puente, 1.

The Hemet-San Jacinto Growers' Association includes most of the apricot growers of the valley.

Northern San Diego County has a chamber of commerce which looks after the productive interests.

Orange County's sealer of weights and measures is making the rounds of sugar dumps and factories testing the scales.

Ground has been broken for a number of buildings for the first Liberty Fair which will be held in Los Angeles, October 12-26.

Corona, Riverside County, has a 20 acre rabbit ranch financed by Los Angeles capitalists. It is to have a capacity of 10,000 rabbits.

Seizure was made last week of five bags of sugar in the basement of a Pasadena building, supposed to be a personal hoarding stunt.

The Ventura County farm bureau is carrying on careful work in bean selection, not only of limas, but of all varieties grown in the county.

The campaign for lower priced fish is still on in this section. It is being conducted by D. B. Lyons, deputy of the state market commission.

Lukens Peak is a name chosen by the forest service for one of the higher peaks of the Sierra Madre; this in honor of the late T. P. Lukens.

The tuna packers are again breaking the record with an enormous pack. It is to be hoped that consumers will get some benefit from lower prices.

Ventura bean fields have been suffering severe damage from the corn worm. It is now reported that a black beetle has been found which feeds on the worm.

Directors of California Prune and Apricot Growers have announced 1918 prices: Standards, 9½ cents per pound; choice, 13 cents per pound; fancy, 16 cents per pound; extra choice, 14½ cents per pound.

The farm bureau of Ventura County is considering taking up a series of tests on extermination of morning glory by chemicals along the line of experiments conducted by Prof. G. P. Gray of the state university.

Ventura County is appealing to the state agricultural college and the department of agriculture for aid in controlling wire worms and other insect pests which have been worse this season than any previous year.

It is stated that there is now in Southern California an 18 per cent carry-over of beans. Growers point out that last year's importation of oriental beans was more than the 18 per cent now on hand, and if they had not been brought in there would probably be no carry-over at this time.

Supervisors of San Bernardino County have appropriated a special fire fund of $2900, to be used to keep fire out of canyons which deliver irrigation water and to provide trailers and other fire-fighting equipment for use of the volunteer fire-fighting companies which will protect the county's grain fields and forage crops from fire.

The Coast and General

Greece reports prospects for a good olive crop.

Arizona will ship about 200 cars of watermelons as against 150 last year.

A $16,000 elevator is being erected by the farmers of Toppenish, Washington.

Montana has placed a qarantine on hay from several districts of Utah, Idaho and Wyoming.

The United States government has awarded contracts for 30 steel cargo ships to Japanese ship yards.

Merchants of Vancouver, Washington, refused to sell flour to strangers or other than regular customers.

Snohomish County, Washington, is shipping potatoes to British Columbia for manufacturing into potato flour.

The war department is calling for supplies of walnut wood for use in making airplane propellers and gun stocks.

The department of labor states that food prices throughout the country have advanced 63 per cent in five years.

Algeria, in northern Africa, is making plantings of carobs for stock feed. Both carob and olive trees grow wild in that section.

Large deposits of nitrate of soda have been discovered in Amargosa Valley, Inyo County, near the Tonopah & Tidewater railway.

New York City is to have a drayage director who will make an effort to decrease the congestion and make proper transfers.

Good grazing land in Northern Mexico has been stripped of thousands of head of cattle because of high prices inducing early selling.

The order prohibiting sending parcels to Americans in the armies overseas except on direct request of the men does not apply to men in the navy.

Women of Uinta County, Utah, under supervision of a federal home demonstration agent, are making quantities of beet sugar and potato starch.

The International Apple Shippers' Association will hold its 24th annual convention in Philadelphia, August 14-16. An apple show is to be held in connection.

Idaho, Utah and the Northwest sugar producing sections will have a material reduction of their beet sugar output because of unfavorable weather conditions.

The United States shipping board has ordered that hereafter all camouflaging of ships built for that board will be prescribed and supervised by the navy department.

Great Britain has imported 8100 motor tractors for agricultural use and orders are outstanding for 5500 more. Before the war Great Britain produced only about one-third of the breadstuffs consumed. From present indications she may end the war by being self-supporting.

The Cultivator some weeks ago gave an interesting item as to methods of making coconut butter in the Philippines. "The Agricultural News of Barbados" now states that the manufacture of coconut butter as a substitute for the real thing is now being taken up on a commercial scale on the island of Trinidad.

Santa Barbara Community Dryer and Cannery

By W. V. Cruess

THIS is a continuation of Mr. Cruess' article, the first section of which appeared in last issue. In that article he touched upon the need of conserving the large surplus of war garden material, which was appreciated by the people of Santa Barbara. The building, plan of which was given last week, was constructed through the use of funds subscribed by the community. The plan of the dryer, the drying tunnel, the fan and air heating apparatus, with illustrations showing method of construction of heating coil, were all features of that article.

* * *

The trays that are used are so constructed that they allow free passage of the air through the dryer. The dimensions and general design of the trays can be see from Figure 6. The trays are 36 inches long by 34 inches wide. The sides consist of two strips 2 inches by 1 inch. These sides are held in place by crosspieces at the end and top of the sides, 2 inches by ⅝ inch and three strips across the bottom, 2 inches by ⅝ inch. The bottom of the tray is made in most cases of ¼-inch galvanized wire cloth. The wire cloth or screen is turned up at one end so that when the trays are placed in the dryer this end would be turned toward the fan. This is desirable because the blast of air tends to draw the dried vegetables off the trays. The turned up screen will hold them in place. The other end of the tray is flat to minimize air friction. For finely shredded vegetables and peas, the size of the screen should be reduced to 1-7 or 1-8 inch mesh.

The trays are placed in the dryer on small trucks. The frame of the truck consists of 2x4's and is 36 inches long by 34 inches wide. Castors are placed in the centers of the four sides. The castors are 2½ inches tall. Two of the castors are on swivel pivots to permit turning of the trucks. The trucks are equipped with two eyes and a detachable handle so

Fig. 7. Blanching Vat

that they may be drawn conveniently. Each compartment of the dryer will hold 17 trays stacked on a truck. (See Figure 3, Page 75 last week).

Preparation Tables

There are four large tables, 10 feet by 30 inches by 30 inches. Two of these are used for the cannery and two for the dryer. The material to be dried is prepared on these tables by peeling, slicing, etc.

Blanching Vat

Most vegetables must be parboiled before they go into the dryer. For this purpose, a circular galvanized tank, 29 inches deep and 25 inches in diameter, has been placed near the preparation tables. The water used for parboiling is heated by a direct steam jet which is let into the tank from the main steam line. The general appearance of the blanching vat can be seen in Figure 7. A galvanized screen basket is used to hold the material being parboiled. The figure shows the general construction of this blanching basket. It is approximately 18 inches in diameter and about 24 inches deep, made of ¼-inch mesh screen, reinforced with strips as shown in the photograph. The blanching basket is raised by a small hand-power crane. In addition to the blanching tank, a tank of smaller size and construction has been mounted on a small truck for chilling and parboiling the material before it is placed on trays. This second tank is filled with cold water for chilling purposes.

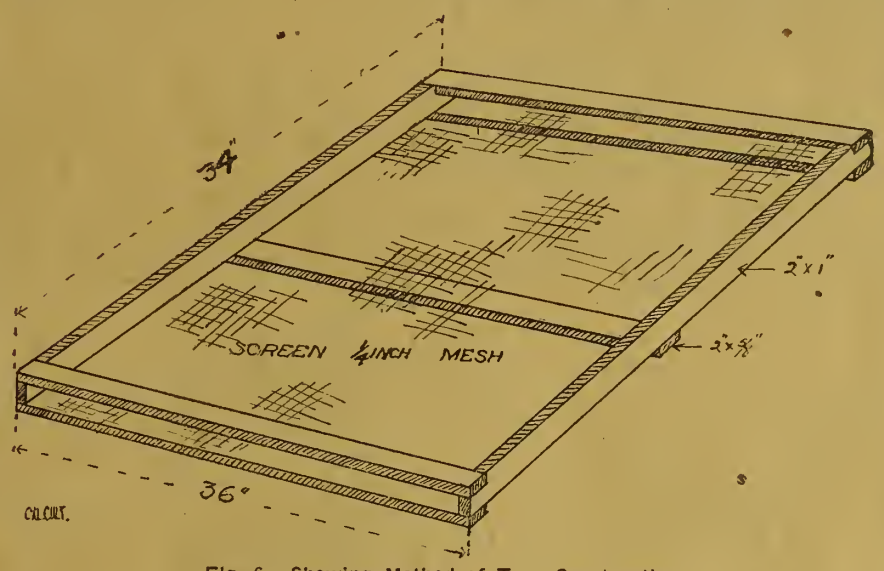

Fig. 6. Showing Method of Tray Construction

Washing Sinks

At one side of the room have been placed two sinks, 20 by 72 inches and 9 inches deep. These are for washing the vegetables before peeling and slicing.

Sulfur

For the sulfuring of fruits, a small sulfur box of the hood type has been constructed of light frame covered with heavy building paper. The box is approximately 56 inches long, 40 inches wide and 60 inches tall. It has handles at the four corners. It is used by placing it down over a stack of 15 or 20 trays. The trays are stacked on the ground near the building and the hood is raised by two workmen and set down over the trays. The sulfur is burned in a pan in a small hole dug in the ground at one end of the hood. This hood is used for such fruits as pears, peaches and apricots, but no vegetables are sulfured.

Storage Bins

To hold the dried vegetables during the conditioning or "sweating" process, eight small bins have been built along the south wall of the building. These bins are about 4 feet in depth at the back and 3 feet in depth at the front, with a slanting door on the top of each bin. The bins are built of tongue and groove and are made as nearly insect tight as possible.

Vegetable Slicer

A small vegetable slicer, capable of handling several tons of vegetables per day, has been mounted on a small table. The appearance of the slicer can be seen from Figure 8. The

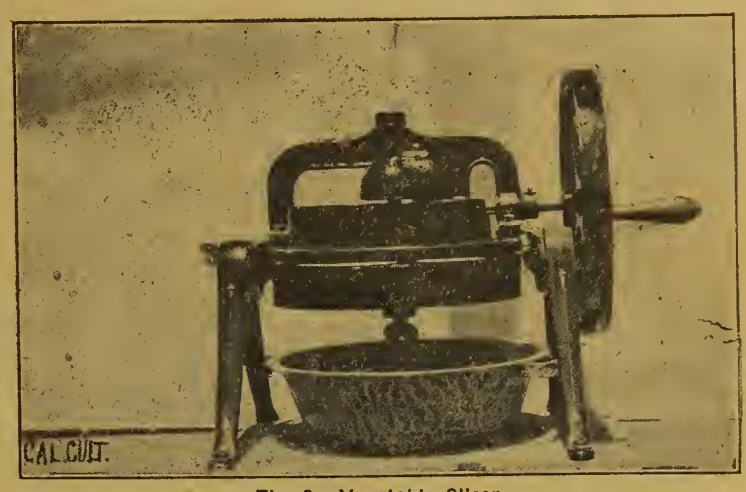

Fig. 8. Vegetable Slicer

slicer is known as the Sterling Slicer Number 40, and is one that has been found very satisfactory for small dryers. It has an adjustable rotary blade which can be set to slice the vegetables to any desired thickness up to about one-half inch.

Miscellaneous Equipment

In addition to the equipment described above, there have also been provided peeling knives, peach pitting spoons, a number of dishpans of moderate size for holding the peeled or sliced products, and several fiber tubs of about 15 gallons capacity. Garbage cans must be provided for caring for the vegetable tops and waste. Pots and buckets of various sizes have also been provided for general use.

Containers

The dried products are to be packed in parchment paper bags inside light cardboard cartons, similar to the ordinary raisin carton. These cartons will be of various sizes, according to the product.

Organization

The association operates under the name of the Community Drying and Canning Association. C. W. Kirk is general manager, and Mayor H. T. Nielson is president. R. T. Stevens is the secretary. F. P. Knott, Mrs. F. P. Knott, Miss J. Wade, and others have been very active in the organization of the dryer and are still closely connected with its activities. The actual operation of the preparation and drying of the vegetables is superintended by Miss Sentell. The labor necessary for operating the dryer is furnished by voluntary workers of the community. Each day's work is done under the supervision of some lady who acts as captain for the day. The women in the community have offered their services free of charge in a very commendable and patriotic spirit. The produce is dried for the grower at a fixed charge per pound of fresh material, which is just large enough to cover the actual cost of drying. No profit is made in operating the plant. Many of the growers have donated their produce to the association. This will be dried, put in cartons, and sold to cover the cost of the drying and packing. In other cases, the grower brings in his or her produce, prepares it, and the association dries it at cost. In such cases, the charge made is somewhat less than where the association carries out all of the labor. The underlying plan is to save the surplus and not to make a profit. During the next season it may be possible to enlarge the plant sufficiently to warrant its contracting for the planting of sufficient ground to operate upon a commercial basis.

Drying Various Products

It may be of interest to outline briefly the processes used in the drying of several of the more important vegetables and fruits.

1. Potatoes: Potatoes are washed and peeled by hand. A knife known as the Pomona peeling knife has been found very satisfactory for this purpose. Potatoes may be peeled mechanically by the peeler shown in Figure 9, but this peeler wastes 35 to 40 per cent of the weight of the potato, while hand peeling gives a loss of only 10 to 15 per cent. The peeled potatoes are kept under water until they are sliced. This prevents darkening. The potatoes are then sliced to a thickness of about 3-16 of an inch —something less than ¼ of an inch. They are then placed in the blanching basket and immersed in boiling water for about three minutes, just long enough to heat the slices through but not long enough to make the potato mealy or soft. This heating process destroys the oxidizing and coloring matter which would otherwise darken the potatoes. The heated potatoes are then spread on trays to a depth of about two slices. They are spread evenly so that air spaces are left between the slices for the passage of the air blast of the dryer. Po-

tatoes dry rapidly and in about six hours at 130 degrees F. they become crisp and dry. When they are brittle and hard, they are considered finished.

2. String Beans: The strings are removed from the beans and the pods are broken into lengths of about one or one and a half inches. They are washed thoroughly and blanched in boiling water for about five to seven minutes, depending upon the maturity of the beans. They are spread at once on trays to a depth of about two pods. It takes about twice as long to dry string beans as it does potatoes. The color of the beans is improved if about half an ounce of baking soda is used per gallon of water in the blanching vat. This seems to set the color and to darken it. The beans are dried until brittle.

3. Peas: Peas are shelled, blanched for three to five minutes, and are spread on trays and dried in the same way as described for string beans. Peas dry more rapidly than do string beans.

4. Carrots, Turnips, and Parsnips: Peel. Shred or slice into thin slices. Parboil five minutes. Spread on trays and dry until hard and brittle. 150 degree F. can be used safely.

5. Onions: Remove the outer dry husks. Cut into thin slices. Dry until brittle, preferably below 140 degrees F.; finish drying at a moderate temperature to avoid darkening. Remove as soon as dry because they will darken rapidly and lose flavor by overdrying. Do not parboil onions before drying.

6. Spinach, Chard, and Other Greens: Wash, trim, or discard defective leaves, spread on trays, and dry at 110 to 150 degrees F. Greens are not so easily injured as other vegetables by overheating.

7. Cabbage: Slice thin and dry at 110 to 150 degrees F., without other treatment.

8. Corn: Husk and remove silk. Immerse on the cob in boiling water for ten minutes. Remove, chill in cold water, and slice from the cob on trays. Dry at 110 to 150 degrees until "bone dry."

9. Squash and Pumpkin: Peel, cut in thin slices, dry without parboiling.

10. Other vegetables may be dried in their natural state if they are sliced to facilitate drying.

In general, the quality of the dried product is better when the drying has been carried out at moderate temperatures rather than at high temperatures. A temperature above 150 degrees F. is considered by most authorities as too high for the production of a product of good flavor. Temperatures as low as 100 to 105 degrees F. are used in some dryers, though the production of dried vegetables of the highest flavor and general quality can be obtained by the dehydration process at 110 to 130 degrees F. Temperatures to 140 degrees F. can be used in safety for the drying if the drying is not carried on too quickly after the product has become brittle.

Fruits are dried in the evaporator after a preliminary treatment practically identical in all respects with that given in the ordinary sun drying establishments in California. Apricots are cut in half and sulfured for from two and a half to three hours. Peaches are peeled and sulfured as in ordinary dry yards. Pears are cut in half and sulfured for four hours before drying. Fruits are started at a moderate temperature, 110 to 115 degrees F., and are finished at a higher temperature. By starting at a low temperature, the tendency of the fruit to sweat and lose juice by dripping is avoided.

Fig. 9. Vegetable Peeler
Fig. 10. Sterilizers

Storage of the Dried Products

The dried fruits and vegetables are allowed to sweat and condition in bins for several days and are then placed in insect-proof containers. Those who take the dried products home with them from the dryer place them in fruit jars or tin air-tight cans. Where the dried product is to be sold by the association it will be placed in cartons.

Cooking Dehydrated Vegetables

The dehydrating process removes the water only from the vegetables, together with a small amount of flavor. If the vegetables are soaked in water for from eight to fifteen hours, usually over night, they will recover their original shape and color. This is always the first step in preparing them for cooking. The next step is usually one of cooking them for a shorter or greater length of time in the water in which they were soaked until they are tender. They may then be used in any way that fresh vegetables are prepared for the table. Potatoes may be fried after soaking and without the boiling process. They are then just as good as fresh potatoes for this purpose. Potatoes may also be mashed or creamed or prepared in any way except baking with the jackets on. The dried vegetables are in all cases already peeled, washed and sliced, ready for cooking, so that the labor of preparing fresh vegetables is avoided by the user. Dehydrated vegetables are somewhat lower in flavor than are the fresh vegetables. For this reason it is de-

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One Avery Sells Another

PROOF of Avery Tractor success is shown by the way Avery Tractor sales grow in the same community. When one farmer gets an Avery Tractor, his neighbors watch its work closely. It is not long before another Avery arrives and then another, for his neighbors see that Avery Tractors stand up under the work.

Likewise, when an Avery gets into a family, other members of the same family soon become Avery owners. Brothers, cousins, fathers and sons, uncles. and nephews are buying Averys. We have many records of where two, three and four brothers in the same family have bought Avery Tractors. The fact that neighbors, friends and relatives buy Avery Tractors after they have watched carefully the work of the first Avery Tractor in their community or family, is the very best proof that Avery Tractors are a success.

Power for Every Farm Need

You can get an Avery Tractor to exactly fit your size farm. Avery Tractors are built in six sizes—a size for every size farm. With an Avery Motor Cultivator you can also cultivate your row crops with motor power. You can also get a size Avery "Grain-Saving" Separator and Avery Plow for any size Avery Tractor. For any kind of field work, belt work or road work, there is a successful and profitable Avery Motor Power Machine.

Built by Motor Farming Machinery Specialists

The five sizes of Avery Tractors, from 8-16 to 40-80 H.P., are all of the same design. They have low speed motors, renewable inner cylinder walls, adjustable crankshaft boxes, gasifiers that turn kerosene or distillate into gas and burn it all, and many other original and exclusive features.

Avery Tractors are built entirely in our own big factories and every part of an Avery Tractor is built especially for tractor work and only for the Avery Tractor. Avery Company are *builders*—not assemblers.

See the Nearest Avery Dealer

Go to your Avery Dealer and get the size tractor and equipment to meet the needs of your size farm. No matter how small or how large the acreage you cultivate, Avery motor farming machinery will fill your requirements. Or, write for complete catalog, showing the Avery Line in natural colors.

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sirable to add considerable seasoning. For this purpose, butter, milk, and various spices, and bacon and ham are very useful. The food value of the dehydrated vegetables is equal to that of the fresh vegetables, when they have been soaked in water to regain their original size. They are very much more concentrated than the fresh vegetables. One pound of dried tomatoes will equal twelve pounds of fresh tomatoes. One pound of dried potatoes is equal to about six pounds of fresh potatoes. The ratios for other vegetables range between these two in most cases. Some of the greens, such as chard, spinach, asparagus, contain even more water than do tomatoes. Farmers' Bulletin No. 841, U. S. Department of Agriculture, gives numerous recipes for cooking dried products.

Santa Barbara Community Cannery

In addition to the drying plant described in one of our previous issues, the community of Santa Barbara has installed a small canning plant to can such fruits and vegetables as are unsuitable for drying or which are canned at the request of the growers. This equipment is housed in the same building as that in which the drying plant is located.

Sterilizers

Two small sterilizers have been installed. One of these is known as a National Steam Pressure Sterilizer (factory size) and the other is known as a Hotel Size National Steam Pressure Sterilizer. These sterilizers would be used at the boiling point of water or can be used as steam pressure outfits for the sterilization of vegetables at temperatures above 212 degrees F. Figure 10 will give a general idea of the precise location of these two sterilizers. The sterilizers are operated by steam from the 15 h. p. boiler previously described for the use of the dryer. In addition to the 15 h. p. boiler, there has been installed a small 3 h. p. boiler capable of operating the two sterilizers at times when the larger boiler will not be in operation.

Blanching Tank

Vegetables are blanched for canning by immersing them in boiling water two to seven minutes. The blanching tank and basket previously described for the dryer are used also for the cannery.

Gas Range

A large fully equipped gas range with four burners and an oven was donated to the cannery by one of the prominent hardware firms of Santa Barbara (Ott Hardware Company). This is used for heating the syrups used in canning and for the heating of soldering irons and for other sundry purposes such as jelly-making, etc. It is a very useful article of equipment.

Containers

In most cases, cans are used—usually the solder top can which is sealed with a soldering iron, or the Sanitary Can, which is sealed with a small Burpee Handpower Capper. Number 2½ cans are used for fruits and Number 2 cans for vegetables. Glass jars are used in many cases for sterilization of fruit, but are not found very satisfactory for vegetables.

Sugar Supply

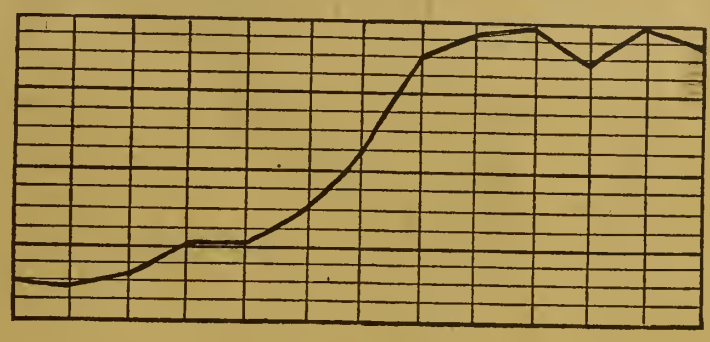
The cannery operates under a special license from the Food Administration and is permitted to buy and sell sugar directly to those who do their canning at the community plant. The sugar is sold at cost under the supervision of the Food Administration.

Organization

The produce is received and handled upon the same basis as previously described for the dryer. The grower of the fruit or vegetables is merely charged for the cost of canning. Where the material is donated to the association it is canned and sold to defray the cost of handling. As in the operation of the dryer the object is to save food and not to make a profit. Mr. Kirk is in general charge and Miss Sentell is superintending the actual canning operations. As nearly as possible, the methods applied are those recommended by the United States department of agriculture and by the University of California. The produce is all graded and put up in a standard manner so that it can be sold in competition with the commercially canned products. The cannery has a maximum capacity of about 3000 cans per day, which will be ample to cover the needs of the community for this season.

Hauser's Digester Tankage
GIVES GREATEST VALUE FOR LEAST MONEY
IT MAKES THEM FAT
Hauser Packing Co. **Los Angeles**

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.



Why live stock prices go up and down

WHEN there is more dressed meat on the market than there is consumer demand for it, meat and live stock prices go down.

But when the consumer demand for meat is greater than the supply, meat and live stock prices go up.

This is the law of supply and demand. It is the law that determines the prices the producer gets for his cattle.

* * * *

Between the producer of live stock on one hand and the consumer of dressed meat on the other hand is the service of the packer.

The packer turns the live stock into dressed meat and by-products and then distributes them to the retailer.

Out of every dollar the packer receives for this meat and by-products he pays 90 cents, approximately, for the cattle.

The remaining 10 cents on the dollar must pay for dressing, freight to market, operation of distributing houses, and in most cases delivery to the retailer.

Out of what is left must come the packer's profit. For Swift & Company during 1917 this amounted to a net profit of ¼ of a cent per pound of beef. On *all* products, it was only a little over half a cent per pound.

A reasonable profit margin is necessary to enable the packer to operate without endangering the efficiency of the business and its value to the producer as a marketing agency for live stock. Complete elimination of these profits would have practically no effect on the farm prices of live stock nor the retail prices of meat.

Swift & Company will gladly co-operate in the carrying out of any national policy that will tend to steady the prices of live stock and meat.

Swift & Company, U. S. A.

A nation-wide organization with more than 20,000 stockholders

Great Conference to be Held in Riverside

By G. H. Hecke, State Commissioner of Horticulture

IN THESE days when every effort is being put forth to increase the food supply of the nation, the question constantly before us is, how can we best organize to increase our production of these articles? In this connection the most important factor entering into consideration, and one which is often overlooked, is, how can we best organize to prevent unnecessary losses? It is a well recognized fact that the annual loss to our food crops from plant pests and diseases equals about ten per cent of the total. A number of these pests are of general distribution, while others are more or less restricted. Among these may be listed some of our most destructive species. In a number of the Western and Pacific states the same crops are grown, thus making the interests of these states in this respect more or less mutual. Whenever some new pest appears in one state the menace becomes greater according to how near or how far distant it may be. At the present time when the success or failure of our efforts in connection with the world war depends largely upon our ability to produce sufficient foodstuffs to feed the nation, our investigations are not only bringing to light some of the shortcomings of the present system, but are also showing us the necessity of expanding and strengthening our organizations.

TEAGUE QUALITY
CITRUS TREES
AWARDED THE GOLD MEDAL AT FOUR INTERNATIONAL EXPOSITIONS.
For Productive values, fine quality of fruit and vigorous growth Teague's bud-selected, (pedigreed) properly trained and carefully handled orange and lemon, pomelo and lime trees are the trees to plant. An experience covering a third of a century warrants the assertion that Teague Quality Citrus Trees possess these qualifications in a superlative degree. All the standard commercial sorts, and garden and ornamental varieties; the largest assortment of citrus trees in America. . . . We invite correspondence from intending planters. . . . Consultations on citrus planting by appointment. 1918 Price list just out; send for a copy.
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FOUNDED IN 1889 AT IT 29 YEARS
Strong Growth Productive Value
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Port Inspection

One which is of particular importance is the subject of interstate quarantines. The Pacific Coast states and California in particular are forced to maintain the most rigid inspection service to protect the United States from undesirable plant pests and diseases of Oriental origin and have developed a highly efficient organization which meets the needs of the occasion. There is, however, a greater obstacle which is much more difficult to surmount. While we may be able to guard our front door, the back door is much more difficult to close. Each state makes its own laws and ordinances in regard to prevention and control of insect pests. These are naturally made without regard to the neighboring states which, figuratively speaking, are left to work out their own salvation. There are few who will not agree that on such problems in which the states are mutually interested uniform laws and ordinances will do much to make for a more efficient organization. They will also do much to simplify many of the present problems, particularly those dealing with preventing the introduction of new and hitherto restricted pests. There are at present a number of insect pests and plant diseases of foreign origin which have been introduced into the eastern part of the United States which if allowed to get into the agricultural regions of the West will cause great damage and necessitate the expenditure of large amounts annually in their control. If left to become distributed by natural means there are a number of agencies which will delay their arrival in this part of the country. Unfortunately, in these days of rapid transit the chances for distribution are greatly increased. Thus great distances can be easily bridged and constant watching of all of the avenues of trade is necessary to keep them out. There are certain cultural areas which are surrounded by natural barriers that act as checks to prevent the distribution of insect and other pests through natural agencies such as flying or crawling. Thus with proper restrictions and inspection of suspicious articles coming through the regular channels of trade the danger to be anticipated can be reduced to a minimum. With all of the Western states working under a uniform system the problem of the danger of introduction can be greatly reduced and the work would be largely simplified. It is to bring these states together that the California commission of horticulture is working.

To Perfect Better Organization

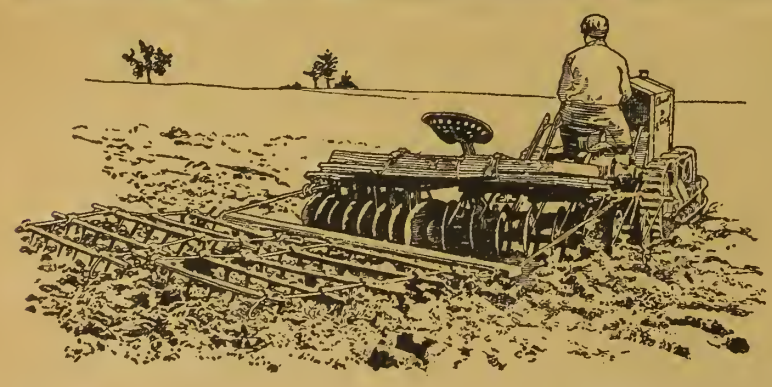
The first step in this direction will be to call together in conference the officials directly concerned with this work in each of the states. To this end the matter has been presented to the different officials and thus far the results have been very gratifying. All have recognized the advantages that would accrue from such an arrangement and have expressed a desire to do all they can to bring about such an organization. The conference has been set for the week of November 11-16, at Riverside, and it is planned to take up the horticultural quarantines now in force between the states represented; to devise and develop practical methods of executing the provisions of the same; to consider the necessity of issuing and putting into execution uniform quarantines against other insect pests and plant diseases that constitute a common menace to horticultural and agricultural industries; to perfect a permanent organization devoted to the prevention of increase in the cost of crop production by collective effort, to prevent the introduction and establishment in the several territories under our jurisdiction of any and all crop pests not yet in these regions, and to devise and adopt ways and means of preventing the further distribution of such as have unfortunately become already established.

Nurserymen Will Participate

The meeting, coming as it does during the same week in which The California Nurserymen's Association, the the annual convention of Fruit Growers and Farmers and the State Association of County Horticultural Commissioners meet at the same place, many opportunities will be afforded to discuss a number of points which are of mutual importance. For example, the nurserymen will have a chance to present the various features of their business which are subject to regulations by quarantines, etc., and will have an excellent opportunity to express their views and offer such suggestions which would improve the present systems. County horticultural commissioners will also have an opportunity to meet the officials of the different states with whom they have had considerable business in connection with plant inspection.

Federal Horticultural Board Interested

In addition to the above, the federal horticultural board of the United States department of agriculture in Washington has from the very first expressed a great interest in this matter and has promised to do all in its power to further and promote the aims of the convention. In order to be of the greatest possible assistance, Dr. Marlatt, chairman of the board, has advised us that he will represent the board in person at the conference and do everything possible to bring matters to a successful conclusion. With such an attitude prevailing toward the effecting of the organization which we hope to bring about, it would seem that if the proper officials can be brought together the success of our undertaking is in a large measure assured.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The Cleveland Tractor is not confined to a narrow field of service. It does the things you want a tractor to do.

It plows, it harrows, it plants, it reaps. Its great power and small size enable it to work satisfactorily in difficult, awkward places. It works efficiently under and among small trees, close up to fence corners, around boulders, on hillsides, over ditches, gullies and rough ground.

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The Cleveland Tractor lays down its own tracks, crawls on them, and picks them up again as it goes along—just like the famous war "tanks."

It does *faster* and *better* work than was possible before. It plows 3½ miles an hour—eight to ten acres a day—equal to the work of *three* good men with *three* 3-horse teams under favorable conditions.

But the Cleveland is *far more than just a tractor.* With pulley and belt, it will saw, cut ensilage, pump—and do the things you demand of a stationary engine.

In addition it can be used for hauling the manure spreader, for grading, dragging logs and pulling road machinery.

It develops 12 horsepower at the drawbar and 20 horsepower at the pulley. Yet with all this power the complete machine weighs less than 3200 pounds, and can be housed in less space than is required for a single horse.

Rollin H. White, the well-known engineer, designed the Cleveland Tractor. It is built under his personal supervision, and is constructed for long service. The track sections are joined with hardened steel pins which have their bearings in hardened steel bushings. Gears are protected by dirt proof cases and are of the same high quality as those of the best trucks. The finest materials are used throughout.

Farming today demands the most comprehensive machinery obtainable—machinery that is useful in doing *many* different things—machinery that is adaptable to widely varying conditions.

Thousands of farmers are looking to the Cleveland Tractor in the present crisis. And the Cleveland is meeting the demands—severe as they are—and is *making more money* for its owners.

It is truly the tractor that does the things you want a tractor to do.

Nearly every farm can use one or more Clevelands to speed up production and cut down costs. Write *today* for complete information and the name of the nearest Cleveland dealer.

The Cleveland Tractor Co.

19077 Euclid Ave. **Cleveland, Ohio, U. S. A.**

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Catalog No. 281

Killefer Quality

Killefer Efficiency

There will be a big demand for Bean Cutters this year and when the time comes they will be needed quickly. Do not delay putting in your order now for what you need in this line, also for extra blades.

We build two weights of sled cutter, the one shown above being our regular wood frame cutter. For heavy ground where a stronger cutter is required, we make a steel arch frame at an additional cost of five dollars. Give your order to your dealer and insist upon having the Killefer Bean Cutter. Send for catalogue.

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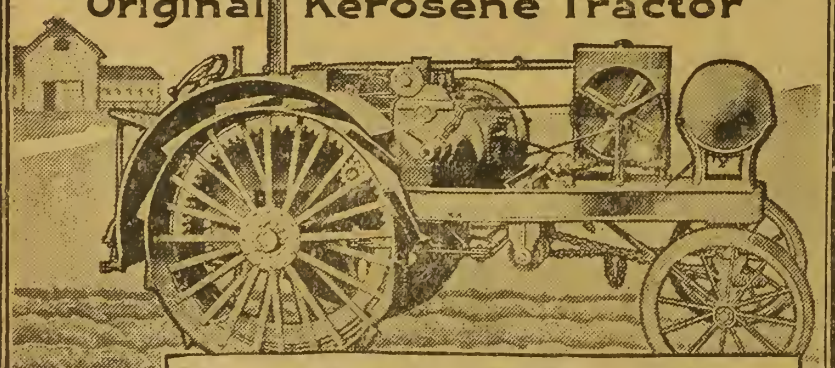
WATERLOO BOY

Original Kerosene Tractor



Speeds Up Work At Harvest Time

Waterloo Boy at Work

John Schoepf & Sons, Seward, Nebraska, write: "We plowed 42 acres with 60 gallons kerosene in 5 days; we shelled 18 loads corn in 2½ hours; we threshed 16 loads clover and alfalfa in 4½ hours with a No. 6 huller, the largest in this section. We think the Waterloo Boy as powerful and as cheap to operate as any tractor."

You need to do some fast work when your standing crops are ready to cut; and you can rely upon the Waterloo Boy one man, three-plow, cheap fuel tractor to make every minute count.

One man can harvest 25 acres per day with the Waterloo Boy and an 8 foot grain binder, or 10 acres per day with a corn binder—has a threshing record of 16 loads clover in 4½ hours.

Stands Severe Endurance Test

The Waterloo Boy motor has pulled a 25-H. P. load for 312 hours without stopping. A test run of eight months showed average kerosene consumption of less than 1½ gallons per hour.

As efficient in the field as at the belt—pulls three 14" bottoms in heavy soil, with ample reserve power. Light weight, large, wide wheels, with powerful quick-starting motor and easy control enable the Waterloo Boy to do good work "where heavier tractors would not dream of working," writes one owner.

Remember, the Waterloo Boy is made and backed by a responsible manufacturer, and has over four years' proven success to its credit.

Illustrated Catalog sent free, shows why thousands of farmers are buying the Waterloo Boy. Write for it.

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WATERLOO BOY TRACTORS

211 No. Los Angeles st., Los Angeles, Cal. Phone 11177

Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Wry Tails in Pullets

I have several young Ancona pullets that carry a wry tail, presumably from some irregularity in incubator. Do you think these will lay as well as others?—B. A. R. S.

A wry tail disqualifies the bird for the show room, but otherwise does no harm whatever. Be careful, however, about using these wry-tailed pullets in the breeding pen. If you have one this year, you will have many more next year. Wry tails, like feathered legs, are congenital, and not due to any fault in incubation.—J. A. K.

Turks Have Indigestion

My young turkeys, three months old, seem perfectly well, but their droppings during the day are light and foamy; at night they seem all right. I don't feed them much of anything, and never have fed much, because they have the range of ten acres, part of which is in barley stubble and part alfalfa. What I feed is just a little milo maze morning and night and at noon cottage cheese. When small, and up to three weeks, I fed hard cooked eggs, onions, oatmeal or bread crumbs, chopped mustard and dock and cottage cheese. — Subscriber, National City.

I don't think you need worry so long as the droppings are normal at night. There is, however, a little indigestion from some cause or other, and it is well to remove the cause before it develops into something more serious. As your birds have good range, why not drop off the morning feed of milo? It may be that they are getting a little too much. Do you keep oyster shell or grit before them? Turkeys pick up grit and gravel if they are on the right sort of soil, but somethimes they need more than they will pick up. If cutting off part of the grain ration and providing shell does not rectify the trouble a dose of Epsom salts would do no harm. Mix it in soft mash (bran moistened with buttermilk is sufficient) about half a teaspoon to each bird, and give no more of the mash than they will clean up quickly. Doctoring is of little use with turkeys, but Epsom salts is a very harmless dose, and helps to clean out the intestinal tract if it is clogged.—J.A.K.

Lentils

Have noticed in your Los Angeles market page that lentils are priced at $24.50. Please advise me where I can get some for seed. What kind of soil is best for them and when is the best time to plant?—Subscriber, San Luis Obispo.

The lentil is grown to a very limited extent in this state. In January 7, 1915 issue of the Cultivator is an article written by a lentil grower, Mr. Igali, at that time editor of the California Hungarian Farmer. He took the ground that more should be grown in this state. At that time he was endeavoring to cultivate lentils on a 40 acre ranch near Santa Cruz. In the article he said: "Beans grown in this vicinity sold for 3½ cents, lentils ten cents, while the expense of raising the two crops is practically the same. Beans produce 1200 to 1400 pounds per acre while lentils may come up to 1000 per acre." (We judge that a thousand pound crop of lentils can be produced only by the experienced grower. — Ed.) "Lentil straw makes excellent livestock food." The culture given by Mr. Igali consisted of fall plowing, shallow spring plowing, seed in drills two feet apart. The principal lentil growing sections of Europe are on light volcanic or ash soils. As to seed, any seed house will probably be able to secure it.

Laying Out Grounds

Will you tell me where I can obtain the proper information about a home orchard and the laying out of grounds for a modest little home on a 30 acre place?—Subscriber, Modesto.

The inquirer does not say as to whether these grounds are for home use with the ornamental entering largely into the plans, or whether the commercial side is also to be considered. If it is just simply the landscaping or beautifying of a home place then landscape architect should be consulted and all conditions should be given to him. If, on the other hand, some fruits from which income is expected are to be planted, then one versed in the fruits of the section in which the land lies should be secured. The fruits of course should be chosen according to the demand of the market and opportunity of selling. We believe that the University of California has a department of farm management which might give advice in such a case.

Hogs per Acre

What are the usual terms for rental of hog ranch? About how many pigs could be raised on 100 acres of sandy alkali ground well fenced that will raise fair beets, corn, alfalfa and barley and has limited amount of water for irrigation, near the Coast?—Subscriber, Oxnard.

This matter of rental, especially of improved ranch which is to be stocked up, is almost impossible to give any idea about without knowing some of the factors such as fertility, distance from market, improvements, class of stock, etc. Naturally livestock farming gives to the tenant an advantage because of the fact that the fertility of the farm is increased in this form of farming. Regarding number of hogs per acre, this like the other question, calls for knowledge of conditions and especially one condition not mentioned in the question, that of experience and ability of the tenant to produce good crops if given right conditions. But here are some figures given in "Swine in America" by Coburn which are very illuminating as to stock on land. One basis of the comparison is that four pounds of grain or 15 pounds of green alfalfa will make one pound of pork. Then the author estimates that one acre of grain will produce 15 bushels of wheat which will produce 225 pounds of pork. An acre in barley will produce 35 bushels which will produce 420 pounds of pork. An acre of oats, 40 bushels, 330 pounds of pork; corn, 40 bushels, 560 pounds of pork; green alfalfa, 10 tons, 1333 pounds of pork. From this it is seen that one acre planted to wheat would only produce about one hog a year to alfalfa's five or six hogs. These figures were taken from Eastern conditions. California soil and irrigation water would mean greater production, and the number could be increased. As to how many hogs 100 acres will care for, no one can say without knowing more of soil, climate, water and personal conditions.

TWO POUNDS APIECE A MONTH OF SUGAR

The American public is now asked by the food administration to go on a sugar ration of two pounds per capita monthly, beginning August 1, to meet a world shortage and to care for the immediate demands of the military forces. The American public at present is on a three pounds per capita ration monthly.

Household rationing is to be voluntary, as at present, but public eating places will be required to observe new regulations effective August 1, permitting the use of two pounds of sugar for every 90 meals served.

Unless the consumption of sugar is reduced, both by householders and the public generally, the food administration warns, supplies for Belgium, the Red Cross, Y. M. C. A., Knights of Columbus, Salvation Army and other organizations working for the welfare of American military forces in Europe cannot be maintained.

The sugar situation confronting the United States is described by the food administration as follows:

Sugar supplies throughout the country, in homes, stores, factories and bakeries, are at low ebb; productions from the American beet and Louisiana cane crops have been disappointing; the yield in Porto Rico has likewise been smaller than anticipated, and the inability of the United States and the Allies to secure sugar from Java and other distant sources, on account of the imperative call for ships for the movement of troops and their supplies, has materially reduced the supply from such quarters.

Added to this already difficult situation, the quantity needed by the army and navy greatly exceeds earlier estimates. We must send a large amount to France and Italy to take the place of the great volume lost through the German and Austrian invasions, during which much beet land was overrun and many factories destroyed; we have to supply certain quantities to neutral nations under agreements; and finally, over 50,000,000 pounds were lost recently through submarine sinkings off our Atlantic coast.

"In asking the public voluntarily to reduce their consumption to a level more nearly equal to the compulsory restrictions in effect in France, England and Italy, the statement says that while sugar is often used as a luxury in America, it has become an essential element for the success of the war among nations of Europe.

"Upon our action here," the statement continues, "depends the possibility of maintaining the ration to our own fighting men and those of the Allies, as well as of avoiding a still further reduction of the allotments to the civil population of the nations fighting Germany which are already down to a point far under their normal needs."

To assure equitable distribution of the sugar the American public is to be allowed the food administration has worked out a scheme of allocation to the states based on population and the needs of the sugar-using industries in the states. Each state food administrator will be in charge of the distribution in his state.

FOOD BOARD GIVES PEAR GROWERS $10 TON EXTRA

Pear growers of California being obliged on term contracts to deliver their crops will receive an increase of $60,000 in the price as a result of a conference held between the packers and growers and H. Clay Miller representing the United States food administration for California.

Because of the increased cost of labor and material it was unanimously agreed that all term contracts for delivery of the 1918 crop will carry a price of $10 per ton in excess of the contract price, provided, however, that such $10 increase does not carry the total price above $47.50 per ton. This figure applies to the regular contract fruit, but prices affecting special sizes are to be settled separately in general accord with the adjustment made on the regular contracts.

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WHEN you throw off *your* harness, and grab a shotgun for a good old-fashioned hunt, you are going to want *the run you have coming to you.*

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Clean and oil your gun with REM OIL, the combination Powder Solvent, Lubricant and Rust Preventive

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Largest Manufacturers of Firearms and Ammunition in the World
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When the forage crops and corn are right for silage, I must be *ready* to cut and *fill my silo* without delay. A few days wait on the job cutter may mean a big loss—and I *must* have plenty of *good silage* to *meet high feed* prices.

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With a Money-Maker Cutter, your silage *don't* need to be too green, too ripe or frosted. You can cut it slowly, and let settle—fill the silo *chock full.* Money-Maker Cutters are up to the standard of Indiana Silos. They cut like a new pair of scissors all the time. The Patented Safety Yoke makes it *impossible* to *get your hands* into the *cutting rolls.* Cushion Drive *absorbs shocks* of operation—*adds long life.*

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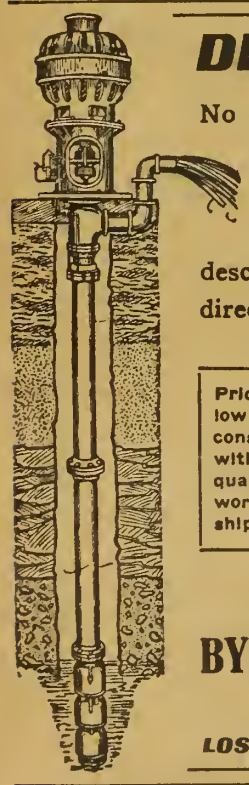

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When writing advertisers, mention The Cultivator.

Vegetable Planting Calendar for August in Northern California

Written for California Cultivator By A. R. Gould

QUITE a few root crops will be ready to store this month and there should be a surplus maturing every month from now on if the successional method as advised in these notes has been strictly carried out. As the crops from each sowing mature, and after the family needs have been supplied the remainder should be stored away in dry sand in the basement or in a dark shed under the dry storing method and if the roots are carefully buried in layers in the sand they will keep perfectly and will supply the family for the winter, furthermore it is the duty of every grower to lay in storage a good supply of home grown vegetable roots as the more you become independent and self supporting from a food supply standpoint the more food Hoover will be able to supply our allies and help to shorten the war.

Irrigation will of course be the controlling factor in further production. Frequent hoeing will also do much to conserve moisture and the extra work will more than repay. Keep busy with conservation methods especially through the corn, beans, tomatoes, beets, carrots and turnips.

Cabbage and Cauliflower

Sturdy plants of these should be planted out this month, and they should be given plenty of water for the first month or so to encourage rapid growth. If they are neglected in the early stages of their growth in this respect they will be doomed.

Kale and Brussels Sprouts

Plants of these should be put out in well prepared ground at the end of the month and planted 18 to 24 inches apart to allow room for development. With regard to water the same remarks noted above for cabbage will apply.

Parsley

Make a sowing of the moss curled variety for winter use.

Tomatoes

Black fly has been very troublesome to this crop and they also seem shy at setting fruit. We may however, have more favorable weather for this crop this month. When watering, keep the spray from the flowers as this will injure the pollen. In fact, great care should be exercised in watering, and if the plants have become well established cultivation with the hoe around the roots should be sufficient and will have the desired effect. Gently shake the plants to assist pollination.

Leeks and Celery

These should now be making strong growth, and during this month an application of liquid horse or cow manure should be given. It is essential that an ample supply of water be given.

Radish

On a well manured border sow the winter varieties of radish; Chinese White Winter, Long Black Spanish and Rose Winter are all good. White Strassburg is also excellent for late summer use and should be sown now.

Turnips

For winter use sow Purple Top White Globe and Purple Top Yellow Aberdeen which is a fine keeper and also of great value for stock feed. Seed of these should be sown very thinly.

Potatoes

During this month the all important potato crop will be ready to dig, and every care must be taken not to injure the tubers. Furthermore, when the work of storing is undertaken every tuber should be examined to see that it is free from fungus disease. Allow them to dry out thoroughly before placing in storage.

Carrots

Sow Danver's Half-long for winter use. It is a good all round variety and fine cropper. A successional sowing of French forcing may also be made.

Lettuce

Sow Iceberg or May King and White Paris Cos to keep up the supply for late fall use. Thin the seedlings early and avoid sowing too thickly.

Beans

Make a sowing of Extra Early Refugee and Early Long Yellow Six Weeks. This will be the last chance, and an extensive sowing should be made. Beans will keep well in the dried state and are always profitable.

August Ornamental Planting Calendar in Northern California

Written for California Cultivator By A. R. Gould

SCARCITY of water is making itself felt in some parts of our section, and some are letting the lawns dry up. This is more especially the case on some of the large estates where the shortage of labor is also a problem. During the hot dry months of our California summer a considerable amount of water is needed to keep the lawns looking always green and the sprinklers need to be at work daily. Many find themselves compelled to cut down on the water in some parts of the garden, hence they class the lawn as a "non-essential" compared with the vegetable supply, and it is also true that when the lawn is perhaps composed of more weeds than grass it is time to abandon it and not waste water on it. Should the conditions be more favorable for the coming season it would be a good plan to put in a new lawn for the spring, then the fact that the old one had been dried off early would leave things in good shape to prepare the soil for resowing.

It is far better to neglect the lawn than perhaps choice flowers or valuable trees or shrubs. As we repeated before, flowers are "essential," they gladden the hearts of our soldiers and they cheer those who are sad through bereavement, to say nothing of the brightness they bring to the sick and wounded. The hospital wards would be dreary without the flowers. Those who have a surplus of blooms at any time or those who have only a few

choice flowers should not forget the sick and lonely.

Cineraria

Those who made the sowing last month as advised will be able to transplant the seedlings at the end of the month. Prepare seed boxes of fine soil composed of decayed leaf soil for the work of transplanting and keep well watered and in the shade at all times. It will not be too late to sow this month. They are useful for borders in a protected place and make a brilliant show as they have a very wide range of colors or they will also prove valuable for house decoration in pots. C. grandiflora nana, is the house type and C. grandiflora stellata the tall star flowered type.

Sweet Peas, Winter Flowering

The Christmas, or winter flowering type, of which there are now quite a few varieties, may be sown now if choice blooms are desired by Christmas or soon after. A bright color is Early Morning Star, a beautiful deep orange scarlet, and the best white is Early Snowflake. This flower if grown in quantity, providing blooms are choice and put on the market in December or January, should prove a profitable flower for the grower. Deep trenching with manure is necessary to get the best results. Give them full sunshine by placing in an open situation.

Gladiolus

Many of the earlier flowered varieties will now be past their best, and some may be forming seed pods. If you have any choice types you wish to have seed of, shake the flower as the pollen becomes ready, and this will insure pollenization. Some of the later flowering types will be flowering now and should the small white fly be attacking the leaves, as it is in some districts, spray with "Blackleaf 40." This fly or small moth is very destructive and can be observed propagating its kind by laying eggs on the leaves.

Chrysanthemums

These, whether grown for specimen blooms or bush plants, will need every care now, both in staking and feeding with liquid manure or working in a good artificial fertilizer. A few of the later flowering varieties may be pinched back or, in other words, the top of the main shoots may be removed. This will then encourage a more bushy growth. Green and black fly will no doubt be active this month on the plants, but constant spraying with nicotine solution will keep these pests down.

Propagation

Cuttings may be taken towards the latter end of the month of carnations, ivy geraniums and other types of pelargoniums, privet and box. The last named is usually grown for edging garden walks. The cuttings of these subjects should be about two or three inches and inserted in sandy soil on a warm border or placed in a frame. They must be kept shaded from the sun.

TROUBLESOME INSECT

Many complaints are being received at the experiment station concerning a small but troublesome insect which attacks beans, tomatoes, peas, chili, egg plant, petunias, and in fact a wide variety of garden and field plants; and inquiries are made as to the best methods of control. This pest is variously described by inquirers as a "small black bug," or a "black louse," with the statement sometimes that it appears first in the form of a "gnat" with wings and later is followed by wingless "lice."

This pest is in reality a species of plant louse or aphis, a member of a very troublesome family of insects, one or more kinds of which infest practically every kind of food plant or fruit grown by man.

The kind under consideration at present seems to be making its appearance in the majority of cases in the winged form, in great numbers, and these being jet black give it a more gnat-like appearance. If not controlled, numbers of wingless lice soon appear and the plant will be severely injured or destroyed by the loss of sap which these pests suck out through their beaks.

Spraying is necessary for control in most cases. A solution of nicotine sulphate in water is effective. One ounce makes four or five gallons of strong, or eight gallons of weaker spraying solution. This amount to about five or six gallons is good for the present aphis. Dissolve enough of any ordinary soap in water before adding the poison to make a suds if you would have the maximum effectiveness; hard water taking more soap than soft water. Spray thoroughly. These insects are not killed by consuming the poison, but by contact of the solution with their bodies. Hence a fine, driving spray is necessary for good results. Do not neglect the under sides of the leaves. It may be necessary to repeat the spraying several times if the winged forms continue to come in on the crop from outside; but if kept in check until the driving rains of summer come, the difficulty is likely to diminish or disappear.

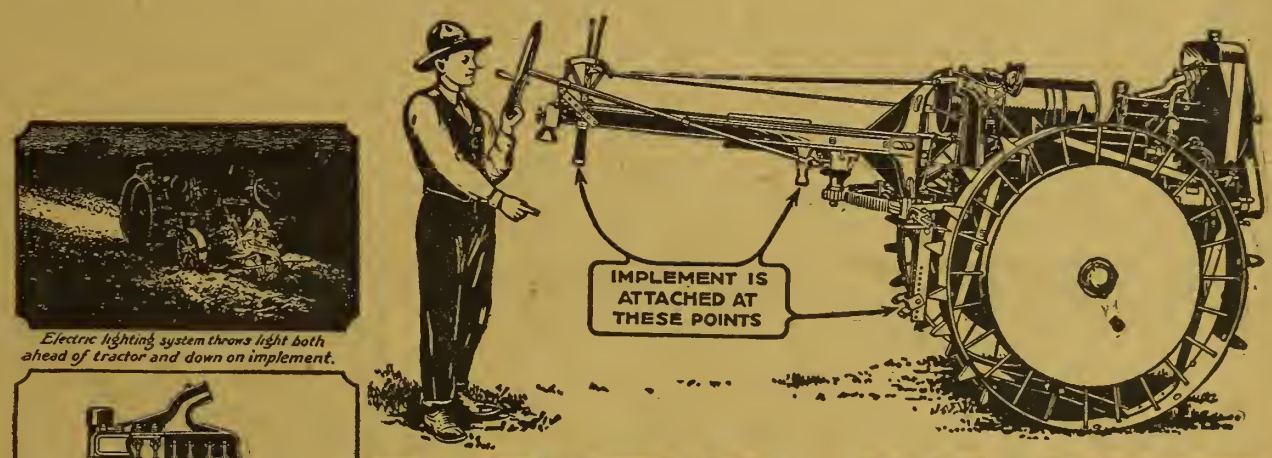
The writer has made use of the weakness of the aphis to withstand driving rain in washing infested plants with strong spray from a hose. This is proving very satisfactory on some tomato plants at present. Of course this means is practicable only in the small garden, and for those who have water under some pressure.

Kerosene emulsion made as follows may be used if preferred: dissolve a half pound of soap in one gallon of hot water; remove from the fire and while still hot add two gallons of kerosene or crude oil. Shake, stir, or, best, pump the mixture into itself until it is a creamy mass. The oil will not separate on cooling if properly made. Dilute with 10 to 15 parts of water for use.

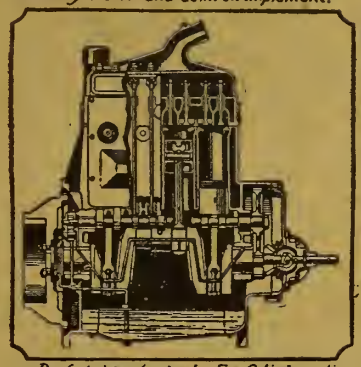
Prevention is better than cure. Begin fighting aphids as soon as they appear. Do not destroy your friends, the lady bird beetles or "lady bugs." They live upon aphids. Do not slay your friends the birds. They destroy more insects than you can even imagine.—Charles T. Vorhies, University of Arizona.

Someone has described the man who evaded the draft as being like a lemon pie. Yellow clear through and without enough crust to go over the top.

No Other Tractor Has So Many Good Mechanical Features=



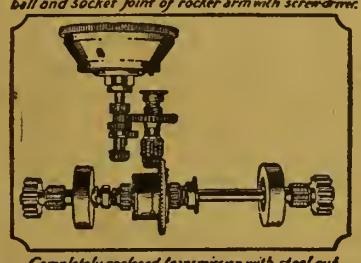
Electric lighting system throws light both ahead of tractor and down on implement.



Perfected overhead-valve Four Cylinder engine, with force-feed oiling system under 55 lbs. pressure.

Diameter of connecting rod bearings 2¾ in. compared to piston diameter of 3¼ in. insuring long life.

Valves placed in perfect adjustment by turning down ball and socket joint of rocker arm with screwdriver.



Completely enclosed transmission with steel cut gears, Hyatt bearings, differential lock, and brakes

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EVERYONE who knows what a tractor should do, agrees that the Moline-Universal has three distinct advantages over all other tractors: lighter weight; greater economy and ease of operation; ability to do all farm work, including cultivating; and ONE-MAN control of both tractor and implement from the seat of the implement, where you have always sat, and where you must sit in order to do good work.

Aside from these distinct advantages which the two-wheel construction gives, the Moline-Universal Tractor, Model D, is still the best tractor on the market. In every detail it has been refined and perfected to the utmost limit of modern engineering knowledge.

Self Starter—Electric Lights

The Moline-Universal is the only tractor regularly equipped with a complete electrical starting, lighting, governing and ignition system. The starter saves many hours of productive work, besides eliminating back-breaking labor. Electric lights enable the tractor to be worked at night during rush seasons.

An electrical governor perfectly controls the engine speed. By simply turning a dial, within easy reach of the operator, engine manitains any speed from ½ to 3½ m. p. h., and automatically handles all changes in load.

Perfected Four-Cylinder Engine

The perfected four-cylinder engine is the latest development in overhead-valve construction. With a bore of only 3½ inches a 2½-inch crankshaft is used. The strength and thickness of the crankshaft eliminates all vibration. Oil is forced through hollow crankshaft to all the main and connecting rod bearings under a pressure of 35 pounds to the square inch. The bearings float on a film of oil, so their surfaces never touch.

Double valve springs give unusually quick action with soft seating. Rocket arms are swiveled on ball and socket joints that may be turned down with a screw driver, placing the valve mechanism in perfect adjustment at all times. This engine develops unusual power and is very economical in operation.

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The transmission is completely enclosed, with drop forged, hardened, and cut steel gears running in oil that reduce power loss to a minimum. All gears are mounted on heavy duty Hyatt roller bearings, with high grade ball bearings fitted with adjustable collars to take up end thrust. Fifteen Hyatt roller and five ball bearings are used in the Moline tractor. Seven splined shafts are used in locking gears to shafts. This is the strongest construction known, and has the additional advantage that it makes the transmission easy to take apart.

For pulling in soft ground, the two drive wheels can be made to revolve as one by means of a differential lock, doubling their pulling power.

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The final drive is completely enclosed in dust tight shields, the edges of which are sealed by heavy grease used to lubricate the gears. Every part of the Moline-Universal tractor is protected against friction and wear.

All working parts are accessible. All the weight is so well balanced on two wheels that the rear end of the tractor can be supported with one hand.

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Our catalog describes the Moline-Universal in detail. Send for it. Address Department 49.

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King Korndyke Pontiac

(shown above)

is getting just the sort of calves that we want in our herds, beautiful individuals, nicely marked, and a very large percentage of them are heifers.

Most everyone knows that he is a son of the great and only King of the Pontiacs, but have you stopped to consider what his sisters are doing right here in California? One of them, K. P. Tola Joe, holds the state record for a senior two year old with 27.18 pounds butter in seven days; another, K. P. Idyl Segis, has just broken the state junior four year old record with a production of 35.78 pounds butter in seven days; another, K. P. Tola, made over 34 pounds butter in seven days as a senior four year old; and K. P. Tola Joe came back as a senior three with over 32 pounds butter in seven days.

Why not put a choice young son of King Korndyke Pontiac at the head of your herd? One of his sons sold for $6500.00 at public auction showing the value that the best breeders place on this blood.

We are pricing his young sons at figures that dairymen can well afford to pay, and you will be pleased with the liberal terms we make. Visit the farm or write us now.

Below is our other great herd sire

Prince Gelsche Walker Korndyke

JANE GARDEN FARM

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The cow making the highest official yearly butter record for 1917-1918, as shown by the report just issued by the Holstein-Friesian Association of America (and it is the world's official record for one year) is Aaggie Acme of Riverside 2nd. She is out of the same dam as our senior herd sire

Prince Riverside Walker

The junior three year old heifer making the highest yearly butter record for 1917-1918 as shown by the report just issued by the Holstein-Friesian Association of America, is Miss Valley Mead De Kol Walker. She is by the same sire as our senior herd sire, PRINCE RIVERSIDE WALKER.

Buy your herd sire in the blood lines that are doing things TODAY and that will increase in value in the records they are bound to make in the TOMORROW.

We have just a few good bull calves by PRINCE RIVERSIDE WALKER, out of splendid dams. They move young at our prices.

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W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

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Registered Holsteins

Depth of body is a prime requisite in the high producing dairy cow, and is especially desirable when found in combination with other outward evidences of dairy quality. Great deep bodies are outstandingly characteristic in the offspring of

Merci Lad Korndyke Burke

our senior herd sire, who is by De Kol Hengerveld Burke and out of Winnie Korndyke Cornucopia De Kol, 31,034.1 pounds milk and 1201.00 pounds butter in one year, the first cow in California to produce that amount of butter in one year.

We have a few of his sons, out of good record dams, for sale.

Inquiries or orders by mail will receive careful and prompt attention.

SANTA ANITA RANCHO *Santa Anita, Cal.*

Anita M. Baldwin, Owner - - *W. H. Taylor Supt.*

Grain Sorghum Popular Crop

Written for California Cultivator By W. S. Guilford

SOME of the best registered hogs in the Sacramento Valley are being grown on a ration that consists very largely of milo maize and alfalfa. In a number of instances these crops are by-products in orchards.

Some of the corn is grown as a second crop on land that is just planted to corn in June. While dwarf milo is most generally grown now, some favor brown Egyptian corn. According to Farmers Bulletin 972, the sorghum corns are being more largely used for human foods and in making industrial alcohol.

It is a common thing to hear California farmers who have come here from the corn belt say; "Oh this sorghum corn is all right, but it doesn't begin to have the food value of good old Indian corn." Yet from the analysis of over 300 samples of different kinds of grain sorghums it compares favorably with Indian corn. The analysis follows: Sorghum; water 9.41, ash 1.69, protein 13.13, carbohydrate 70.91, fat 3.30, fiber 1.53. Indian corn; water 10.60, ash 1.50, protein 10.30, carbohydrates 70.40, fat 5.00, fiber 2.20. It will be noted that only in fat are the sorghums lower than the Indian corn, and they contain less crude fiber.

The difference between the sorghums and Indian corn is principally in their digestibility. The results of a number of experiments seem to indicate that the sorghums are about ten per cent less digestible than Indian corn, making their feed value about 90 per cent of the latter grain.

In storing sorghum grain in the head it is advisable to have ventilators in the center of the bins or cribs. At Monroeville Orchard we store it in slatted cribs made similar to Eastern corn cribs.

A good deal of the crop in the Sacramento Valley is harvested rather late in the season and is apt to be damp from rains. In the late crops there are also many partly matured heads. There is a great temptation to pick these on the theory that they will dry out and make some feed. When the crop is gathered in this condition it should be spread out thinly on a floor so that it can dry. Otherwise it will heat and mould, as it will when threshed and sacked.

There is a prejudice against feeding sorghum corn to horses and mules, especially among old time "mule skinners" who are used to feeding barley. They say it "heats 'em up too much." This might be true if fed heavily for a long period, but Senator Frank Leavitt fed corn to his horses at Packer Bend Farm in Glenn County this season with very good results.

Black and Whites in Almost Every California Pasture

California Holsteins have made a name for this state. World's records have been made and an answer to the demand for food has been made with a milk production which has been wonderful.

Field Notes from the Live Stock Men

Don't breed pedigrees—breed hogs.

Chicago reports cattle markets as seriously affected by restrictions in beef consumption.

Mendocino County wool growers have been disposing of their wool clip at around 64 cents for better grade.

Beef cattle breeders are considering more and more the worth of the silo in beef production. At present day prices the silo is a winner.

The Lake Mills Holstein Breeders' Consignment Sales Company announces the next semi-annual sale to be held at Lake Mills, Wisconsin, October 22-23.

Western wethers in Chicago markets, which are not especially choice, are selling around $13.50, and lambs are in keen demand at $16. The supply is under the expectation.

Aberdeen-Angus will be judged at the coming Chicago International by George Cram of Aberdeenshire. He is recognized as one of the most capable judges of Aberdeen-Angus in Britain.

Milking Shorthorns are increasing in popularity in England, and one bull, Thornby Premier, recently sold at the Arnold S. Wills sale at $1000. Forty-two females averaged $1015 at the same sale.

AYRSHIRE BREEDERS' SECRETARY

At a meeting of the board of directors of the Ayrshire Breeders' Association, held in New York, July 8, James G. Watson, in charge of the extension activities of the association, was elected secretary and treasurer as successor to the late C. M. Winslow. Mr. Watson is a Scotsman by birth. He is a graduate of the Iowa state college of agriculture and was extension dairyman at that institution for two years. He filled a similar position with the University of Missouri. He was manager of the Southwestern Dairy Show at Kansas City, 1916.

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Is a name that is becoming firmly entrenched in the story of high producing Holsteins in California.

By a grandson of the great transmitting cow Changeling, and out of a daughter of the former world's record cow Creamelie Vale, he is bred to great production and has already proven his worth with 18 A. R. O. daughters in our herd, records up to over 30 pounds butter in seven days.

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San Lorenzo *California*

King Sadie Vale Rose

son of King Korndyke Sadie Vale and a 27.98 pound daughter of a 32.41 pound dam is at the head of the carefully selected

Tagus Holsteins

His first calves are splendid youngsters and you can find exceptional values in his young sons out of some of our best cows. Visit the herd or write for prices.

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From my herd of 75 registered Holsteins, can spare ten yearling heifers and heifer calves splendidly bred, closely related to 30 and 40 pound cows.

One bull calf, whose eight tested nearest dams averaged 31 pounds weekly butter record.

One service bull from 29 pound dam. One hundred and two pounds milk one day. His two nearest dams through sire yearly record average 21,000 pounds milk and 812 pounds butter.

Write me for low prices and further information.

Frank Reed Sanders, Mesa, Ariz.

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REPORTS ON JUNE LIVE STOCK MOVEMENT

Increases in the receipts of all classes of live stock, except horses and mules, at stockyards in 58 cities during June, 1918, as compared with June, 1917, are shown by the monthly report on live stock at stockyards, issued by the bureau of markets, United States department of agriculture. The increase in cattle receipts amounted to 29,602, or 1.7 per cent; the increase in hog receipts amounted to 153,905, or 5.5 per cent; and the increase in sheep receipts amounted to 173,470, or 14.3 per cent. Increases in cattle receipts in 56 cities for the half year ending June 30, 1918, as compared with the corresponding period for 1917, totaled 981,366, or 10.4 per cent. The corresponding figures for hogs show an increase of 1,748,043, or 8.1 per cent. A comparison of the sheep receipts for this six month period with those for the first six months in 1917 shows a decrease of 192,155, or 2.6 per cent.

GUERNSEYS AT FAIR

A special premium offer will be made by the American Gurensey Cattle Club for award at the California State's Fair's live stock show, August 31 to September 8. The club offers cash premiums totaling $100 to Guernsey breeders showing at the State Fair. The money will be apportioned among the older herds, get of sire and produce of dam classes, two year old and yearling heifers and advance registry cows.

PRODUCES MILK WITH LOW COUNT IN ORDINARY BARN

Milk with a low bacterial count can be produced in practically any cow barn. Any dairy farmer with a healthy herd can produce such milk with an investment of only $10 or $20 and a little extra care.

The United States department of agriculture in an experiment produced low bacterial count milk in a poor dairy barn.

The only changes made were:

Simple steam sterilizer for utensils.

Clean cows, especially clean udders.

Small-top milking pails.

Proper manure removal and good bedding.

The bacterial count fell from as high as 1,200,000 to an average of 2154.

Any farmer can produce clean milk.

Low bacterial count is the beginning of good milk, but milk must also be safeguarded from other contamination likely in a dirty barn. There is no legitimate excuse for the production of milk from dirty cattle or in a filthy stable. In addition milk must be properly cooled to prevent the multiplication of bacteria.

FARM PONIES

By W. S. Guilford

Some folks think that Shetland ponies and pony outfits are only for rich people and for use in the parks in cities. The fact of the matter is that there is no place where a pony is of more real value than on the farm. There was never a time when boys and girls could be of more use on the farm than now—in fact they can be a factor of considerable importance in the harvesting of the crops this year if they are managed rightly.

And with a pony a good boy or girl can be of as much or more service in running errands on the farm and to town as a grown person. They can get repairs and do hauling of light articles and all such things as well as anyone. This makes many self reliant boys and girls; the ownership and care of the pony makes character and instills a love for live stock as nothing else will.

You Can't Afford This

No farmer is rich enough to feed 40-cent butter to his hogs or his calves in partially skimmed milk.

It's a waste of money.

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It's a waste that your pocketbook, your neighbors, your country, all condemn.

But it's a waste that is going on today on every cow-owner's place where an inferior or half-worn-out cream separator is being used, or where the farmer is skimming by the wasteful "gravity" method.

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Order your De Laval now when you need it most and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

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Young bull calves for sale with yearly record backing.
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Live Stock at Hawaii's First Territorial Fair

Written for California Cultivator By Ralph J. Borden

PACIFIC Coast breeders of live stock will be interested in knowing something about the live stock shown at Hawaii's First Territorial Fair in Honolulu, June 10-15, 1918.

Most of the prize winners at this fair can be traced to or came directly from mainland, chiefly Pacific Coast, breeders. A fine array of beautiful animals came before Prof. G. H. True of California who judged the live stock, and he as well as other visitors and our own people, was agreeably surprised at the quantity and excellence of the individuals shown.

Holsteins, Herefords, and Berkshires predominated, but there were some fine examples of Jerseys, Guernseys, Ayrshires, Aberdeen-Angus, and Durocs, Hampshires and Tamworths. There was also a fine showing of thorough bred and Percheron horses and a large class of polo ponies which was easily topped by that world famous animal, Helen C.

In the Holstein classes the competition was heaviest in the aged bull and aged cow classes. In the former class, there was much surprise, when the bull, Lord Asa, which had recently been imported from Napa State Hospital by C. W. Lucas of Honolulu and which had won renown at the California Land Show last year, was beaten by a younger animal owned by the Kamehameha Schools of Honolulu. This bull, King Korndyke Pontiac Terpstra 174898, has developed into a beautiful example of Holstein type and was in perfect show ring condition. Beside winning himself, he headed the "Exhibitor's Herd" that won first place and it was his "Get of Sire" that also took the blue. He was bought in the 1915 Sacramento sale, having been consigned by A. W. Morris & Sons of Woodland. His sire is King Korndyke Pontiac who now heads F. W. Kiesel's herd at Sacramento.

In the aged cow class, Blissen, a beautiful animal owned by C. W. Lucas, which was purchased from Napa State Hospital, was awarded the blue. She was closely pressed by a cow shown by the College of Hawaii and won out with her beter condition.

Other winners of special note, which had been imported from Coast breeders were: A two year old Holstein bull, Carnation McKinley Pietertje owned by Robert Hind of Hawaii and which originally came from the Carnation Stock Farms, Seattle; a Holstein cow under three years, Hartog Pontiac De Kol Burke, a daughter of Segis Pontiac De Kol Burke, which was bred by A. W. Morris & Sons, Woodland and now owned by the Kamehameha Schools at Honolulu; a Holstein two year old heifer, Mollie Dutchland Colantha, a daughter of Dutchland Sir Korndyke Colantha from James McGillivrays herd at Sacramento and also owned by the Kamehameha Schools; an aged Ayrshire bull owned by Lihue Ranch of Kauai and which came here from J. W. Clise's well known Washington Ayrshire herd; an aged Ayrshire cow, Willowmoore Buntie B, owned by G. P. Cooke of Molokai which also came from J. W. Clise, Washington; an Aberdeen-Angus bull owned by Grove Ranch of Maui; a two year old Hereford bull, University Prince, which H. W. Rice of Maui recently purchased from the University Farm at Davis, California; an aged Berkshire boar, Anoakia Duke 3d, owned by the Kamehameha Schools farm which was imported from Santa Anita Ranch in California; aged Berkshire sows owned by H. W. Rice of Maui which were imported from well known Pacific coast hog breeders; and many others.

The livestock show was certainly "a winner for a beginner." Already the breeders are making their plans for next year, and the Pacific Coast breeders will undoubtedly find in Hawaii an outlet for some of their best stock during the coming year.

To be an Hawaiian Herd-header

King Korndyke Pontiac Terpstra, 174898. First prize aged Holstein bull at Hawaii's First Annual Territorial Fair, Honolulu, Hawaii, June 10-15, 1918. Owned and exhibited by Kamehameha Schools Farm, Honolulu. "One of California's sons who has made good in Hawaii."

PRUSSIC ACID IN SORGHUM

It is well known that sorghum cane, in its younger stages, at least, contains an appreciable amount of that deadly poisonous substance, prussic acid. Stock raisers aften ask how poisonous sorghum is, and when it becomes harmless. Many analyses of cane show that after the plants are four feet high there is no danger in feeding reasonable amounts of it. If the animals break into a field and gorge themselves, they will no doubt get the "colly-wobbles" just as they would in a field of green corn. It would require about 125 pounds of sorghum to furnish a fatal amount of the poison. The latter is always higher in amount during excessively dry periods, and in sickly, stunted, yellow cane. Sorghum seeds do not contain any prussic acid until several days after they have sprouted.—J. J. Willaman, University of Minnesota.

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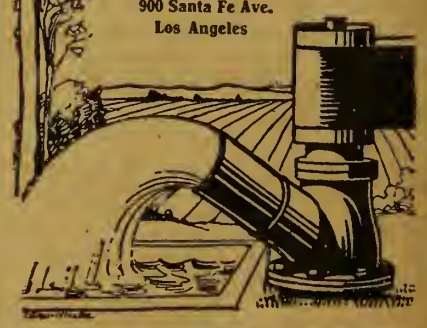

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Stick to Your Type

By W. C. Rosenberger in Shorthorn in America

AN army of soldiers firing at random accomplishes no less than an army of breeders who have no particular aim in their breeding operations beyond the natural increase in numbers. So often has this theme been harped upon that it seems now to be a senseless waste of time for the "harper" to take it up again. However, it is such a woeful waste of time and energy for the beginner to depend solely upon the school of experience wherein he is his own preceptor. "Experience is a dear teacher, but fools will learn at no other." Much truth in that, but then the great big majority of Shorthorn breeders are not fools, and if the importance of working toward a distinctive type in their breeding operations were impressed upon them most of them will profit by the experience of others and save themselves much time, expense and disappointment.

The first essential for a beginner is to find out what is the proper type. That knowledge can best be acquired by visiting the best cattle shows and sales and seeing what kind of cattle find most favor in the eyes of competent judges, and the kind that bring the most dollars from successful breeders. Having firmly fixed in mind the type you wish to breed, select foundation stock as near your ideal as you can find. Stick to your type. It is the easiest thing in the world to be led astray by running onto a "bargain" in a breeding matron though she doesn't measure up to your standard. Leave her alone. That's very likely the reason she is a "bargain."

Having determined upon your type and with prospective purchases in mind, it is advisable to look into the ancestry. All traits and characteristics are more or less hereditary and while imperfections may be absent in the first generation it is not at all unlikely that they will crop out in the second or third. Next to the importance of individual merit in your foundation stock it is essential that they come from a typical ancestry.

Some years ago a Shorthorn man who had gained considerable prominence as a breeder found it necessary to change herd bulls. He selected a splendid individual, a beautiful roan, hard to find fault with in any particular. His first crop of calves, however, was disappointing. A large proportion of them had black noses and their coats were full of black hair. While these imperfections may seem trivial from the beef makers' standpoint, it can not be denied that it made them undesirable members of a breeding herd. Unfortunately this breeder investigated his herd bull's antecedents after rather than before his purchase and found that the owner of his grandsire had beefed him as well as his black nose progeny for that fault. Such things as black hairs, black noses and unsightly horns may appear trivial to some because they have nothing to do with conformation, but an animal with those imperfections is unsightly and undesirable as a reproducer because it is unsightly.

It is scarcely within my province, or that of any other breeder, to choose for you a type. My ideas might be at variance with yours and since your judgment may be the better, it would be wrong for any breeder to warp it with the insistence that his ideals are the only correct ones. However, the beginner can not go far wrong by acting upon the advice of a successful breeder to solve the perplexing questions that continualy confront him.

Whatever measure of success I have attained as a breeder and exhibitor, I believe to be due to the fact that I have always endeavored to breed to a type, and though I may have won my share of prizes I am by no means satisfied, not because I have not won more but because I have not yet produced my ideal Shorthorn and possibly never will. But, I shall keep on trying.

If I were asked to give the specification of my ideal Shorthorn it would be a task beyond me. I could enumerate the most essential points, but there is something else, which, while it has nothing to do with type, if by type you mean general conformation, is something very much to be desired in a breeding animal. Anyway if that something is lacking, the animal doesn't suit you. What is it? Perhaps we may call it character, which taken literally, means a total of good qualities but with the breeding fraternity has a much broader meaning. If there is anything about a cow we don't like but can't describe we say she lacks character, and assume the other fellow knows what we mean. So, we'll call it character and insist that our breeding animals possess it along with type.

What we are striving for in the beef type, of course, is an animal upon whose frame we can grow the greatest amount of beef in the shortest possible time, and don't forget that time is not the least in importance.

Having selected foundation stock that approximates your type ideal, and assuming that you have chosen wisely, as surely as "like begets like" the progeny will be of the same caliber. But your work has just begun. So far you have only exercised judgment in calf production, henceforth it means physical exercise as well as to give them the care and attention necessary to properly rear them. Neglect during calfhood has ruined many a show prospect. Care and feed are as essential to the proper development of a breeding animal as to one destined for the show ring.

Nearly every beginner resolves that he will give his herd just a little better care than other breeders, but as the herd increases resolutions are broken. As a matter of fact care should increase in greater ratio than the calf herd because you have more at stake. I will conclude with this suggestion: Choose the right type, resolve to take good care of your herd, then see that you stick to both type and resolutions.

ARMY MAKES A RECORD MEAT PURCHASE

The largest single order for bacon and canned meats in the history of the world—99,560,000 pounds of bacon and 134,000,000 pounds of canned meat—has just been placed by the quartermaster's department, U. S. A., for the American army overseas. This will take the bacon from approximately 1,900,000 hogs.

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Why Pay the Peddler Twice My Price?

Dr. HESS Stock Tonic is a Conditioner and Worm Expeller

Keep Your Animals in Condition

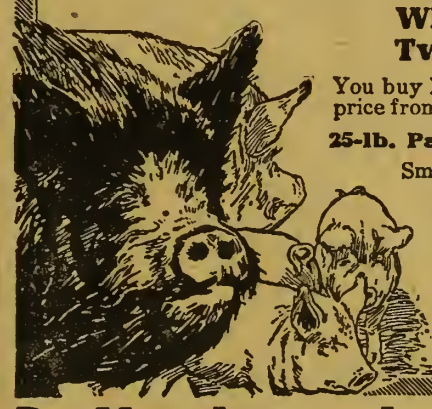
Now is when your stock need special attention because the change from pasture to dry feed is one of the most critical periods of the whole year.

You can lose more pounds of summer gain through November neglect than you can get back all winter. Keep up the good condition—keep up the summer thrift—keep out the worms.

Dr. Hess Stock Tonic

Drives Out the Worms. Makes Stock Healthy

Keep the animals' systems right and you need have little fear of disease. Stock Tonic tones the stomach and the digestive organs, gives better action to the bowels, improves the blood, purges of worms, and gives real life and vigor. The *Nux Vomica* in it aids digestion. *Quassia* is a true tonic and a worm expeller. The *Sulphate of Iron* is a blood builder and worm expeller. There is *Epsom Salts* for a laxative, and *Nitrate of Potash* to act on the kidneys.



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For Sale — Forty acres located thirty miles north of Fresno. Nine acres alfalfa, 15 acres corn and 14 acres raw. Five-room bungalow with bath, hot and cold water, barn, tank house and electric pumping plant with large dirt reservoir. Terms extremely reasonable. Price $8500.00. $740.00 cash which includes interest for one year. The second year 4 per cent interest only, third year five per cent interest only; fourth year six per cent interest and $500.00. Fifth, sixth and seventh years $1000.00 and interest at six per cent. Balance of payments to be arranged. Did you ever see anything easier? Owner has more land adjoining and you can buy more if you wish. A mighty easy chance to get a start with a little money. Address Owner, 1329 Wishon Avenue, Fresno, California.

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Goats—Hogs—Cows — I have a mountain ranch adapted to all three. Abundance spring water. 100 acres tillable. Will sell an interest for cash to buy stock and improvements. Address for information or appointment, A. P. Walbridge, Los Angeles County Farm, California.

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For Sale—Coachella Valley fig and date ranch. Best fruit proposition in Southern California. Bears fruit from May to January and brings top prices. A. L. Wood, Indio, California.

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For Sale—Twenty acres of level land, irrigated, school, store and post office one mile, Shasta Co., California. Price cheap. Owner, Box "I," Casa Grande, Arizona.

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Hand windmill force pumps. Deep well double acting Ames, $145, or complete with 7-in. cylinder 100 ft. 8-in. pipe, rods, $375. No. 4 vertical two-step centrifugal pump, $150; this pump thoroughly overhauled, like new, guaranteed; 6-in. horizontal centrifugal, $125. Many others: 20 short lengths flexible drum cable, 50 to 150 ft. 8 to 15- a ft.
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For Sale — Rabbits, New Zealand Red bucks, young stock. Fine ones. W. O. Robb, Galt.

MISCELLANEOUS

Auction Sale — Wednesday, August 7, 1918, on Jacob Ranch, 7 miles west of Stockton, 1½ miles northeast of Holt, California. On the above date we will sell to the highest bidder the complete dairy herd and equipment owned by Mendosa & Gomes, consisting in part of 160 head dairy cattle, 88 milch cows, mostly second and third calf Holsteins, some Durhams; 40 two year old Holstein heifers, springers; 16 yearling Holstein heifers; 17 Holstein heifers, 1 to 5 months old; 2 two year old Holstein bulls; 2 sows with litters; 10 head horses, including 4 work horses, 1 driving mare, 3 two year old colts, 2 yearling colts; 2 farm wagons; 1 milk wagon; 1 buggy; 1 John Deere hay loader (new); 2 Milwaukee mowers; 1 rake; 1 hay derrick; 2 sets work harness; and all other implements on this well equipped ranch. Sale begins at 10 o'clock a. m. Fine lunch will be served at noon. Terms of sale, cash. Owners, MENDOSA & GOMES, Holt, California. Auctioneers, Col. Ben A. Rhoades, Los Angeles, California; Col. Cy. N. Clark, Modesto. Sales Manager, C .L. Hughes, Ochsner Bldg., Sacramento.

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To Reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

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A few fall boars left by Royal Superbus —also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
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Escalon, San Joaquin County, California.

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"Billiken" Chester Whites — The Easy Feeding Mellow Type. All bred sows and bred gilts are gone. Have 15 gilts that were farrowed in May, 1917, that will be bred for September farrows. These gilts are all sired by "Billiken." One young service boar that is just 13 months old. C. B. Cunningham, Mills, California.

Superba, World's Grand Champion Poland-China boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, California.

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Mule Foot Hogs, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California, "The Blue Gums."

Duroc-Jerseys—A few spring boars, outstanding individuals, sired by Johnson's Defender and out of State Fair winning sows, for sale. Frederick M. Johnson, Napa.

For Sale — Registered Berkshire pigs sired by Lord Premier's Successor 11th. J. Pringle, at Oak Crest, Cahuenga Pass, R. D. 10, Box 864, Los Angeles. Holly. 14R3.

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Berkshires—A few very fine March farrow pigs, sired by Fair Oaks Champion. Fair Oaks Ranch, Willits, California.

Carruthers' Farm Berkshire Hogs—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Orland, California.

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Wanted—An experienced grower of trees and shrubs, and pot and bedding plants, to take charge of greenhouse and small nursery. Man of California or Texas experience preferred. State experience and give references in first letter. Apply in own handwriting. Tucson Seed and Floral Co., Tucson, Arizona.

Wanted—Partner with $2,000.00 in blacksmith shop, garage and hardware store. Work for 3 men in blacksmith shop the year round. Blacksmith or wheelwright. A. Witt, Paige, Tulare Co., California.

Wanted—Rabbits, two to three pounds, live weight. Address J. M. Cholwell, R. F. D. No. 1, Box 289, San Gabriel, California.

Want to Hear From Owner of farm or fruit ranch for sale. O. O. MATTSON, St. Paul, Minnesota

Write for Prices on Seeds—Cheap Sudan, Honey wanted. Box 501, Fowler, California.

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Two Registered Holstein Bull Calves out of A. R. O. cows with high milk and butter records. Ten and seven months old. Fine individuals. Will sell at a bargain to make room. Call or write. California George Junior Republic, Chino, California.

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Pedigreed Bull Calves, Registered $50.00, unregistered $25.00. Service bulls $75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, California.

For Sale — Four Holstein-Friesian bulls from 8 to 18 months old. Pedigreed stock. Fine individuals. Will be registered on sale. Geo. C. Roeding Company, Fresno, California.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, California.

Registered Shorthorns, cows with calves at foot, yearling heifers and bulls for sale. Fair Oaks Ranch. Willits, California.

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Fall Chicks—August 12th, forward! R. I. Reds—White Rocks, Black Minorcas—White, Brown Leghorns—Book orders now. Circular with prices and information free. Mission Hatchery, Campbell.

Fall Chicks—Book orders now for your future meat and egg supply. Write for special circular on fall chicks. Stubbe Poultry Ranch and Hatchery, Palo Alto, California.

Chix—Barred Rocks, R. I. Reds, Orpingtons, Anconas, Minorcas, Buff, White and Brown Leghorns. Breeding Cockerels. Enoch Crews, Seabright, California.

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Fighting Grasshoppers

Written for California Cultivator by E. R. de Ong

THE many outbreaks of grasshoppers occurring throughout the state makes it imperative that extraordinary care be given to their control. This applies especially to the northeastern counties of the state, the northern end of the Sacramento Valley and the west side of the San Joaquin Valley. In some instances large areas are infested but in most cases the outbreaks are local and the damage caused is acute, especially in young orchards or vineyards. These swarms usually originate in uncultivated ground, especially dry, rocky hill land. In the valleys egg laying is most common along roadsides, ditch banks and in alfalfa land. As the food is exhausted near the breeding grounds short flights are made into adjoining fields and orchards, where the insects remain until the egg laying season in late summer. At this time of the year the males may be found in abundance in localities favorable for the depositing of eggs, the females being present only long enough to lay a cluster of eggs and then return to the feeding ground. The eggs are placed in little holes bored in the ground or in clusters of grass and remain unhatched until the following spring. Occasionally there is a scattering second brood but usually it is of little consequence. These breeding grounds should be located as closely as possible in the fall so that control work can be concentrated on these points early in the spring. Some results can be gotten by cultivation of these breeding grounds in the fall or winter or by plowing them to a depth of about eight inches. But the greatest advantage comes in early applications of poisoned bait to these areas before the hoppers scatter or attain any size.

One of the most successful means of fighting grasshoppers is by means of a poisoned bait the common formula for which is as follows: 25 pounds wheat bran, one pound white arsenic or Paris green, two quarts blackstrap molasses, one-half dozen lemons or oranges, four gallons water.

This material is mixed carefully and broadcasted at the rate of five pounds per acre in alfalfa or other field crops. For orchard work it is sprinkled about under the trees and especially on the side from which the insects are coming. Damp ground is usually attractive to grasshoppers and can properly receive extra attention.

To secure the best distribution in the field, the common type of broadcast grain seeders are used. This will cover a strip about 30 feet wide, scattering the bait so thoroughly that it will be eaten up rapidly by the grasshoppers. Coarse lumps of bait will dry before being eaten and should be picked up.

Another type of distributor, originating in Kansas, is a canvas bag carried over the shoulder to which is attached a feeding device. From the lower corner of this bag is drawn off a sleeve 12 inches long, 13 inches in circumference at the upper end and eight inches at the lower end. A metal tube, 28 inches long, two and one-half inches in diameter at the upper end and at the lower end one and five-eighths inches, is fitted into this sleeve. Over the lower end of the tube wires are soldered to break up the bait in passing through. This tube is swung back and forth in front of the operator, distributing the bait evenly and quickly over a strip of ground 50 or 60 feet wide.

If bran is difficult to secure fine sawdust has been used up to one-third or one-half the amount of wheat bran, without apparently making any difference in the results obtained.

Either white arsenic or Paris green may be used as the active ingredient. The latter is more expensive but mixes readily with the dry bran and may be secured at almost any trading point. White arsenic has a tendency to pack thus making it more difficult to mix with the bran. This may be overcome by combining it with equal parts of a good grade of caustic soda or concentrated lye, the two chemicals form a solution without boiling. Sal soda may be used in place of caustic soda at the rate of one ounce of arsenic to two ounces of soda, by boiling these a short time a solution of sodium arsenite is formed which is combined with the molasses and fruit and mixed thoroughly through the bran.

The molasses used should be one having a strong flavor otherwise it will add little to the efficiency of the mixture. The fruit is put through a meat chopper, both the pulp and juice being used. Over-ripe cantaloupes or tomatoes are sometimes substituted for the citrus fruits. Mix the ingredients in a tub, barrel or mortar box, adding sufficient water so that the mixture crumbles well in broadcasting. The more water it contains the better as it loses its attractiveness after drying.

FEDERAL GOVERNMENT TO PROTECT LUMBER OWNERS FROM FIRE

In accordance with the state wide movement to save food, forage and forests from fire, as a war emergency measure, the forest service for California has completed cooperative arrangements with 126 individual owners of more than 250,000 acres of timber lands by which all fires are discovered, reported and put out by the government. The forest service, after accepting deposits, averaging 1½c per acre, from the owners, guarantees to protect the timber and fight all fires at government expense.

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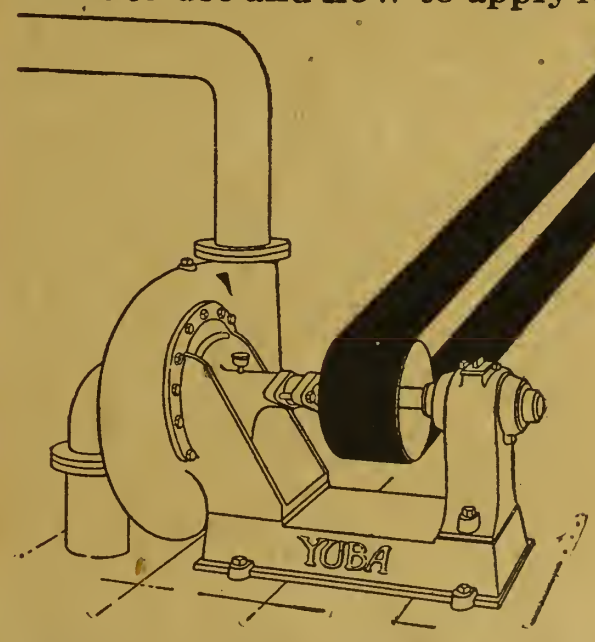

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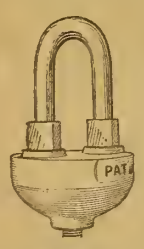

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Household Department

The Star Spangled Banner

By Francis Scott Key

Oh, say, can you see, by the dawn's early light,
What so proudly we hail'd at the twilight's last gleaming,
Whose broad stripes and bright stars thro' the perilous fight;
O'er the ramparts we watched were so gallantly streaming?
And the rockets' red glare, the bombs bursting in air,
Gave proof thru the night that our flag was still there.
Oh, say does that star spangled banner yet wave
O'er the land of the free and the home of the brave.

On the shore, dimly seen thro' the mists of the deep,
Where the foe's haughty host in dread silence reposes,
What is that which the breeze o'er the towering steep,
As it fitfully blows, half conceals, half discloses?
Now it catches the gleam of the morning's first beam,
In full glory reflected, now shines on the stream.
'Tis the star-spangled banner; oh, long may it wave
O'er the land of the free and the home of the brave.

Oh, thus be it ever when freemen shall stand
Between their lov'd homes and the war's desolation;
Blest with vict'ry and peace, may the heav'n rescued land
Praise the pow'r that hath made and preserved us a nation.
Then conquer we must, when our cause it is just,
And this be our motto: "In God is our trust!"
And the star-spangled banner in triumph doth wave
O'er the land of the free and the home of the brave.

THE THIRD VERSE

THE Stars and Stripes, the "Star Spangled Banner" of which Francis Scott Key sang when he created our national anthem, has gone across the sea to help Britain drive the Hun out of France and Belgium. The task is too great for France and Belgium unaided.

There are still a few who think Europe a strange place in which to see our fighting forces battling and our flag floating over those forces. France and Belgium, they may think, have nothing to do with the Star Spangled Banner, and they would wish our national anthem rewritten, if we must fight "over there."

There is no need to rewrite the "Star Spangled Banner." France and Belgium may sing it just as it stands and as whole heartedly as they sing their own national songs. If Francis Scott Key had been a seer he could not have written a song to express more truly the duty America is now performing. France is threatened with annihilation, Belgium hardly lives. The free men of France and Belgium, true heroes! are standing between their homes and the desolation the Hun is bent on spreading. If, by America's unselfish power, France is saved, and Belgium is saved, they may well praise that power for saving them. "The Star Spangled Banner" is a world song today, and the flag it sings is to be the savior of the world. How goes the song?

"O, thus be it ever, when freemen shall stand
Between their loved homes and the war's desolation."

So be it! May our flag be there, taking the part of the freemen, when Hun or vandal, Goth or savage, threatens peaceful homes with the desolation of war.

"Blest with victory and peace, may the heaven rescued land
Praise the power that hath made and preserved her a nation."

So be that, also! May Belgium, may France, restored and whole, praise the power that made them free nations in the beginning and preserved them free nations through the intervention of our flag. The power that made us a power has led us into battle and guided us aright. That power has given us the strength that will preserve France and give renewed life to Belgium.

"Then conquer we must, when our cause it is just,
And this be our motto: 'In God is our trust!'"

For did ever a nation have a juster cause? Was there ever a cause better worth fighting for? Or more worthy of triumph? For that must be the conclusion of the war—

"And the star spangled banner in triumph shall wave
O'er the land of the free and the home of the brave."

Not forever, as over conquered lands, but for a brief moment while the Hun creeps back to his cave, let the star spangled banner wave in triumph over France re-won, a land of the free, and over Belgium re-conquered, a land of the brave. Released from the murdering, destroying Prussian, the marauded nations, France and Belgium, will again stand whole and well. America will have done her part. And then? Why, then let it be always the same. Let us preserve our strength, ready to aid the democracies against the encroachments of autocrats and to prevent new horrors such as the world is seeing! And, wherever those freemen may be, and whenever the call—

"—thus be it ever, when freemen shall stand
Between their loved homes and the war's desolation!"— Riverside Press.

FORTUNATE THE AMERICANS!

Fortunate the Americans in this land of plenty who can find day after day some hardship to endure! Happy the "wheatless-till-harvest" citizens.

Let those who have murmured over mixed breads read this bill of fare:

Breakfast—Acorn coffee, two slices of bread made of rye, sawdust and potato flour.

Dinner—Soup with a small piece of tough beef, coarse turnips and no potatoes.

—Supper—Soup again with two slices of bread.

This represents the fare of 15 American prisoners in Germany, according to a Canadian soldier recently escaped from a German prison. These men were captured in a trench raid last October and since then had been marched many miles on these rations.

Our men, said the Canadian who had talked with them, had not received parcels of food like other soldiers. As a result of their treatment they were thin, weak and mentally dazed. In this condition they had been exhibited from village to village as a proof that the American army could not stand against German trained soldiers.

In the lines and behind the lines America is giving daily proof that she can stand against any amount of German training. There is no better evidence of this fighting spirit than the continued response of the food administration's wheat saving campaign. Entire counties have given up their holdings of flour, and two states, Idaho and Texas, pledged their willingness to give up wheat if necessary. Total abstainers clubs have been formed in different states.

If days and weeks and even months to come are wheatless, let no whiner call himself an American. In this world of heroic suffering, fortunate the American who can find some hardship to endure!

The Cultivator Patterns

8923—Girl's One Piece Dress. Cut in sizes 6, 8, 10 and 12 years. The dress is to be slipped on over the head.

8914—Ladies' Corset Cover. Cut in sizes 36, 38, 40, 42, 44 and 46 inches bust measure. The pointed pieces at the back are crossed and buttoned at the waistline.

8899—Ladies' Waist. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. The reveres are attached to the small roll collar.

8901—Ladies' Apron and Cap. Cut in sizes 36, 40 and 44 inches bust measure. Two large pockets are stitched at the sides of the apron.

8894—Ladies' Dress. Cut in sizes 36, 38, 40 42 and 44 inches bust measure. The shirtwaist buttons at center front; the skirt has three gores.

8604—Girls' One Piece Dress. Cut in sizes 6, 8, 10, 12 and 14 years. The dress is a coat model and it is belted in at the normal waistline.

8922—Ladies' Three Gored Gathered Skirt. Cut in sizes 24, 26, 28, 30, 32 and 34 inches waist measure. The skirt is gathered at the sides and back to the slightly raised waistline.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all paterns. Address

PATTERN DEPARTMENT
CALIFORNIA CULTIVATOR
Los Angeles.

U. S. Food Administration.

Ol' Br'er Rabbit better make hisse'f mighty skeerce en not go projickin' roun' whar dere's cookin' goin' on, 'cause a rabbit in a pot is er goin' ter look mighty good to mos' ennybody 'fo' long 'count er folks havin' ter save on meat. 'Sides folks'll kinder have ter save de wheat flour fer comp'ny en eat bread made outen dis yere "substitute" flour. Dat wise ol' owl done say dat to win de war you got ter feed de sojer boys dat's doin' de fightin'. Dat's w'at's takin' de wheat en meat.

HOUSEHOLD QUERIES

Dill Pickles

I am wanting a recipe for making dill pickles and am unable to find one anywhere, so am writing to ask you if you could tell me how they are made: the proportion of salt and dill.—Subscriber, Lemoore.

Use knife to cut cucumbers from the vine so as to leave a short stem. Do not rub off the little briers. Cucumbers three to four inches long are a good size for dill pickles. Put layer of grape leaves on bottom of stone jar, then a layer of dill, then a layer of cucumbers, repeating grape leaves, dill, cucumbers till jar is full. Cover top with grape leaves. Make brine of six quarts water to three-fourths pound salt (enough for 100 ordinary sized cucumbers). Boil. After cooling pour over cucumbers, with the addition of seven cups vinegar if wished. Place cloth over pickles, over this a board or plate that will fit down on the pickles. Weight this down so that all cucumbers are forced beneath the brine. Leave in dry cool place ten days, then pour off brine, wash pickles carefully and cover again with cold, freshly boiled brine (or brine and vinegar) as before. The pickles are ready for use in about 30 days. About two pounds of dill is required for four gallons of pickles.

Cucumbers in Brine

Please give recipe for common brine pickling of cucumbers. — Subscriber, Wasco.

To one gallon cucumbers add one cup salt and cover with boiling water. Let stand 24 hours, pour off brine, boil and pour back over pickles. Let stand 24 hours and repeat; repeat third time. These will keep perfectly in barrel or stone jar if weighted board forces all cucumbers under the brine. If desired they may be put in jars and scalded without further treatment. Of course if weaker brine is used it might be necessary to sterilize after putting in jars. When wanted for pickles these cucumbers may be taken from brine, washed and covered with boiling water and vinegar, equal parts with alum size of hickory nut. In about six hours the pickles will be firm and ready for use.

Sweet Cucumber Pickles

How do you make sweet cucumber pickles?—Subscriber, Wasco.

Soak cucumbers in brine two weeks; drain and if large slice lengthwise. Boil 20 minutes in syrup of six pounds sugar (or substitute), four quarts vinegar. Keep in tightly covered crock.

Food

PICNIC MEATS

As a temporary measure we have been asked to eat less beef, but are assured that we may at present eat more pork and have never been told to go lightly on liver and tongue, so let's adjust home appetites to meet the shipping program. Summer days call for cold meats for supper and for picnics. Don't depend on tin cans for these meats. You can prepare delightful dishes without drawing on the national reserve of canned meats. It is a good plan, too, to pile up your own reserve of home canned meats.

Pickled Tongue

Boil a fresh tongue by placing it in hot water, let come to boil and boil gently for three hours or until tender. When cooked, remove from water, skin, put back into water and let get cold. Slice in thin slices, put one layer of sliced tongue in bottom of an earthenware crock, then one layer of sliced onions, a few thin slices of lemon, salt, pepper, a little sugar and mixed spices. Repeat until all material is used up, having the onion and lemon on top. Cover all with vinegar. If vinegar is too strong, use two-thirds vinegar and one part water.

Pressed Beef Tongue

One beef tongue, one veal shank, cayenne, salt, pepper, two tablespoonsful catsup.

Boil tongue and veal shank together for three hours, putting it on to boil in cold water. This will draw out all of the gelatin of the veal bone. When tender, skin the tongue, cut in slices or put through a coarse meat grinder. Add salt, pepper, cayenne and catsup, put into a mold and cover mixture with the liquid in which it has been boiled, when cold, turn out on a platter, slice and serve.

Calf's Head-Cheese

One calf's head, one tablespoon herbs, pepper, salt.

Put calf's head in enough water to cover, let come to a boil and boil gently until meat leaves the bone. Take up with a skimmer, put into an earthen bowl, season with salt, pepper and chopped herbs. Lay a cloth in a colander, put minced meat into it. Fold a cloth over the top, weight down with a plate. When cold, slice and serve with mustard.

Potted Liver

Wash and cut up two pounds of beef liver. Cover with cold water, let come to a boil, and simmer until tender. Press through a potato-ricer; add one-half cupful butter, one-half teaspoonful salt, and a dash of pepper. Beat the above mixture to a smooth paste. Mince a good-sized onion and a few sprigs of parsley and stir into the mashed liver. Put in jars in a cold place and it will keep for some time.

Pork Loaf

One pound chopped ham, one pound chopped fresh pork, three tablespoons chopped onion, one tablespoon salt, one teaspoon pepper, one and one-half teaspoons curry powder, one tablespoon sage, one egg, one-third cup cream.

Chop meat and onion and mix together. Add egg and cream. Shape into loaf and tie in cheesecloth. Simmer two and one-half hours in three quarts of boiling water, to which one teaspoon salt and four tablespoons vinegar have been added. Drain, press and cool.

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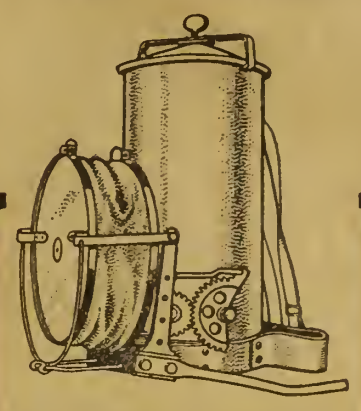

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Correspondence with the advertisers in the California Cultivator will convince you that their articles will save you money.

Los Angeles Market

Los Angeles, July 31, 1918.

BUTTER

Produce Exc. Quotations.

½c higher.

California extra creamery 51

Dairy Exchange price past week on extras.

July	24	25	26	27	29	30
'18 ...	51	51	51	51	51	51

Rcts. wk. ending July 30, 283,700 lbs.

CHEESE

Brokers prices:

California fresh, lb. 26
Eastern Daisies 29
Oregon triplets 27

EGGS

Exchange quotations. Prices to retailers 2 to 3 cents higher.

Fresh extras 46½
Case Count 46
Pullets 45

Dairy Exchange prices past week on fresh extras.

July	24	25	26	27	29	30
'18 ...	47	47	46½	46½	46½	46½

Rcts. wk. ending July 30, 1899 cases.

POULTRY

We quote to producers.

Broilers .....29@33
Fryers 33
Hens, small, 20@22; heavy 25
Colored 27
Ducks, lb., 22; ducklings .....25@28
Roasters 33
Roosters, old 17
Turkeys .....28@33
Geese 15
Rabbits, live, 17@18; dr. 40

LIVESTOCK

We quote cwt. f. o. b. L. A.

Corrected Wednesday morning, July 31, by the Cudahy Company.

Cattle—
Beef steers, av. 1000-1100 lbs. 11.50@12.00
Heifers, good .....8.50@9.00
Cows, good .....8.00@8.50
Canners .....5.00@6.00

Hogs —
Av. 150 lbs. 16.00
Av. 175-225 lbs. 17.00
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers .....11.00@11.50
Ewes .....10.50@11.50
Lambs .....14.50@15.00
Yearlings .....11.00@11.50

POTATOES

Wholesale selling prices:

New, lug 75
Sweet, lb. 7

ONIONS

Wholesale selling price, cwt.:

Brown, cwt. 2.50
Garlic 10
White, lug. 1.10

VEGETABLES

Wholesale prices:

Artichokes, doz. 1.10
Jerusalem, lb. 7½
Beans—Wax, lb. .....5@6
Ky. Wonder .....6½@7
Limas, lb. 7
Beets, sk. 2.00
Cabbage, lb., 3½@4; sk. 3.50
Carrots, doz. 30
Corn, sugar, lug. .....85@90
Cucumbers, lug. .....65@75
Egg Plant, lb. .....6½@7
Horseradish, lb. 15
Lettuce, doz. .....30@35
Leeks 35
Okra, lb. 12
Mint, doz. 40
Onions, green, doz. .....25@30
Peas, Tel., lb. .....13@14
Peppers, Chili, lb., 9@10; Bell .....12@13
Parsnips, doz. 40
Parsley, doz. 20
Radish, doz. 30
Rhubarb, C. W. bx., 1.15; Strawberry 1.30
Squash — Summer, lug .....50@65
Tomatoes, cr. .....1.00@1.35
Turnips, doz. 50
Watercress, doz. .....35@40

FRUITS

Wholesale prices:

Appies, new, lug 1.35
W. Astrachan, bx. .....2.85@2.90
Apricots, lug. .....1.25@1.35
Bananas, lb. .....6¾@7
Cantaloupes .....2.35@2.65
Crabapples, lug 1.25
Currants, cr. 1.85
Figs, bx. 1.00
Grapes, Malagas, lb. .....7½@8
Peaches, Freestone 1.85
Clingstone, lug 2.50
Pears, Bartletts, bx. 3.00
Plums, lug .....2.50@2.75
Strawberries, tray 1.10
Watermelons, lb. .....2¾@3

CITRUS

Lemons, packed, 6.25; loose 5.25
Julce 4.00
Oranges — Valencias 7.00
Grapefruit 4.25

BEANS

These are prices made by wholesaler to retailer:

Lady Washington 13.00
Limas 13.50
Pinks 8.00
Manchurian Reds 8.50
Baby Mex. 9.00
Garhanzos .....9.25@9.50
Small Whites 13.00
Blackeyes 8.50
Teparies .....8.50@9.50
Lentils 24.50
Mex. Red 8.65

HONEY

Johbers' prices:

White extracted .....20@22
Light amber extracted .....15@18
Amber extracted 14
Alfalfa amber extracted .....15@16
Fancy white comh, per case....4.50@6.00
Comb lt. amber, per case.....5.00@6.00
Beeswax, lh. .....34@36

HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A.:

Tame Oat .....26.00@28.00
Volunteer Oat .....13.00@15.00
Wheat .....23.00@26.00
Barley .....23.00@26.00
Alfalfa .....19.00@22.00

Quotations furnished by California Alfaifa Growers' Association, Riverside, California.

Alfalfa hay $25.50 car lots f. o. b. L. A.; $23.00 f. o. b. common shipping points, taking $2.50 carload rate to destination.

GRAIN AND FEEDSTUFFS

Prices on Local Grain Exchange:

	Bid	Asked
No. 1 bright feed barley	$2.60	$2.65
Milo maize, local		3.50
Oat middlings		36.00

San Francisco Markets

San Francisco, July 30, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:

Extras 52
Prime firsts 49

Prices Extras past week and year ago:

July	23	24	25	26	27	29
'18 ...	52½	52½	52½	52	52	52
'17 ...	41	40½	40½	41	41½	..

Rcts. wk. ending July 29, 370,900 lbs.

CHEESE

Dairy Exchange quotations:

Cal. Flats .....25@26½
Ore. Y. Am. 26½
Jack Cheese, full cream 26

EGGS

Dairy Exchange quotations:

Extras 49
Firsts 45½
Selected Pullets 47
Firsts 44

Prices Extras past week and year ago:

July	23	24	25	26	27	29
'18 ...	49	49	48	48½	49½	49
'17 ...	35	37½	37	37½	37½	..

Rcts. wk. ending July 29, 10,067 cases.

POULTRY

We quote to producers, lb.:

Per. lb.: Large hens, 28@31; Leghorn hens, 25@27; mediums, 26@27; broilers and fryers, ¾ to 1 lb., 37@38ffl 1½ to 2 lbs., 35; old roosters 19@20; ducks, per lb., 22@28.

Belgian hares, llve, lb. 15-17.

Squabs, doz. .....2.50@4.00

LIVESTOCK

Prices gross weight:

Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.

Steers, lb., 10@12; thin, 8@9; cows and heifers, 7@8¼; thin, 4@5½; calves, 7½@11.

Sheep—Per lb. gross weight: Unshorn wethers, 11@11½; ewes, 9½@10; lambs, yearlings, 12@12½; milk, 14@14½.

Hogs—Hard grain fed, weighing 100 to 140 lbs., 16½@16¾; 140 to 300 lbs., 16¼; 300 to 400 lbs, 16½.

POTATOES

Wholesale selling prices at wharf, cwt.:

River, new, cwt. .....2.50@2.75

ONIONS

Wholesale selling price on wharf, cwt.:

Garlic, new, lb. .....12½@15
New Red, sk. .....1.50@1.75
Clarksburg, sk. .....2.00@2.10

VEGETABLES

Wholesale selling price:

Beets, sk. .....75@1.00
Beans, String, lb. .....3@4
Limas, lb. .....6@7
Wax .....4@5
Beets, new, sk .....1.50@1.65
Corn, green, sk. .....2.00@2.50
Cucumbers, lug. .....50@75
Egg Plant, lug. .....75@85
Lettuce, doz. .....15@20
Okra, lb. .....9@10
Onions, green, bx. .....65@75
Peppers, Bell, lug, 65@85; Chili, lb..5@6
Peas, lb. .....7@8
Squash — Summer, lug .....50@75
Italian, lug .....50@75
Tomatoes, lug .....1.00@1.50

FRESH FRUITS

Apples, Gravenstein .....2.00@3.00
Red Astrachan .....1.75@2.00
Red June 3.00
Apricots, small lug .....85@1.00
Bananas, lb. .....7@7½
Berries—Pr. ch.: Strawberries, 9.00@12.00; blackberries, 8.00@11.00; loganberries, 6.00@8.00; raspberries, 8.00@10.00.
Cantaloupes — Ponies, 2.00@2.50; standards, 2.25@2.50.
Figs, bx.: Mission, double layer, 1.00@1.35
Grapes, Seedless, cr. .....1.75@2.50
Malaga .....1.75@2.00
Fontainebleu .....90@1.15
Huckleberries, lb. .....18@21
Nectarines, cr. .....1.75@2.00
Peaches, cr. .....1.00@1.25
Pears, Bartlett, bx. .....1.75@2.75
Plums—Bx., Burbank, 75@1.00; Climax, 1.00@1.25; loose packed, bx., 50@75.
Pineappies, doz. .....4.50@5.00
Watermelon, lb. .....1½@2

CITRUS

Lemons, bx.: fy. 7.00; ch., 5.00@6.00; standard, 4.00@5.00; lemonettes, 4.00@5.00; oranges, 5.50@6.50; grapefruit, 3.00@4.00.

BEANS

Jobbers' prices, cwt., recleaned:

Limas .....12.00@12.25
Bayous .....8.00@8.25
Small Whites .....Nominal
Large Whites .....Nominal
Mexican Reds .....8.00@8.25
Blackeyes .....7.25@7.50
Pinks .....6.90@7.00
Red Kidney .....11.75@12.00
Cranherry .....Nominal
Teparies .....8.50@8.75

DRIED FRUITS

Raisins: Associated prices 1918 are:

Muscats: Packages seeded, fancy, 36-16s, 9.625; fancy, 48-12s, 7.75; choice, 36-16s, 9.125; choice, 48-12s, 7.375. Bulk seeded: 25-lb. Bakers, 8.00; 25-lb. fancy, 8.85.

cleaned, 48-16s to case, 9.00; bulk, recleaned, 36-12s to case, 8.00; package, recleaned, 25-lb. boxes, 9.25. Sulphur bleached—northern stock: Bulk, 25-lb. boxes, choice, 10¼; bulk, 25-lb. boxes, fancy, 10¾; bulk, 25-lb. boxes, extra fancy, 11¼. Soda dipped — northern stock—Bulk, 25-lb. boxes, 10.

Loose: 1-crown, 25 lb. boxes, 8½; 2-crown, 25 lb. boxes, 7½; 3-crown, 25 lb. boxes, 8; 4-crown, 25 lb. boxes, 8¾.

Layers: 3-crown, 20 lb. boxes, 1.85; 3-crown, 20 1-lb. trays to box, 2.00; 4-crown, 20 lb. boxes, 2.10; 6-crown, 20 lb. boxes, 2.95; 3-crown, 10 lb. boxes, 1.05; 4-crown, 10 lb. boxes, 1.20; 6-crown, 10 lb. boxes, 1.65; 3-crown, 5 lb. boxes, .65; 4-crown, 5 lb. boxes, .70; 6-crown, 5 lb. boxes, .90.

Sun-Maid clusters, 20 1-lb. cartons to box, 2.35.

Imperials, 4 5-lb. cartons to box, 3.40.

Vineyard run, 50 lb. boxes, 3.90; 100 lb. boxes, 7.50.

Sultanas. Packages, recleaned, 48-16s to case, 9.65; bulk, recleaned, 25-lb. boxes, 9.00.

Peaches — California Peach Growers quotes opening prices for 1918 crop f. o. b. factories California. Prices guaranteed to December 31.

Bulk basis and boxes unfaced 1 and 2 cents more.

	Practically Peeled	Yellows (Old style)	Muirs (Old style)
Standard	12⅞c	11¼c	11⅜c
Choice	13⅜c	11¾c	11⅞c
Fancy	14⅜c	12½c	12⅞c
Ex. Fancy	15½c	13¼c	14c
Slabs		10¼c	

Prunes and Apricots. The Prune and Apricot Growers' Association have named following prices on apricots:

Standards 9½
Choice 13
Extra Choice 14½
Fancy 16
Extra Fancy 17½
Extra Moorparks 19
Slabs 11

Cash on delivery price on all grades will be 8 cents with the exception of standards and slabs on which it will be 6 cents.

Prunes: The government will take all the 50-60; 60-70; 70-80 sizes. The quotations sent to the trade last night are as follows:

The bulk prices will be:

Sizes:	Price per lb.
20-30	17
30-40	10¾
40-50	10
50-60	9
60-70	9
70-80	8¾
80-90	8¼
90-100	7¾
100-120	4¾
Above 120	4¼

One cent per pound, and one and one-fourth cents per pound will be added for 50 and 25-lb. boxes.

HONEY

Jobbers' prices:

White extracted .....20@22
Light amber extracted .....15@18
Amber extracted 14
White comb, cs. .....4.50@6.00
Light amber comb, cs. .....3.50@4.00
Beeswax 34

HAY

Under date of July 27, Scott, Magner & Miller says:

Receipts past week, 3142 tons. Although we have not changed the range of prices, if the arrivals continue for a few weeks at the present rate we do not doubt but what a lower range of prices will prevail. At the present, however, most dealers have paid high figures for the hay which is coming in and are therefore making a strenuous attempt at holding the market in order to realize, at least, cost. Reports from country districts show some sales at higher figures than the present range of prices here, considering freight that must be added. Some consumers have been putting in their winter supplies, but the majority are running along with the market.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market — for prices to consumers charges of cartage, commission and handling must be added according to conditions:

Fancy Wheat Hay, large five wire bale .....26.00@27.00
No. 1 Wheat or Wheat and Oat Hay .....22.00@24.00
No. 2 Wheat or Wheat and Oat Hay .....19.00@21.00
Choice Tame Oat Hay.....24.00@26.00
Other Tame Oat Hay .....21.00@23.00
Wild Oat Hay .....18.00@22.00
Barley Hay .....18.00@22.00
Alfalfa, first cutting .....16.00@20.00
Alfalfa, second cutting .....22.00@24.00
Stock Hay .....18.00@20.00
No. 1 Barley Straw, bale .....50@80

GRAIN

Wheat: Base price for 1918 crop common white hard to farmers is $2.20 per bushel of 60 pounds, delivered in bulk at terminal warehouses. For sacks add 9 cents, less tare for weight of same.

Barley—New No. 1 feed, $2.55@2.60 per cental; milling, $2.65@2.70; off grades quoted down to $2.45.

Oats: Red feed, $2.60@2.65 per cental.

Corn: Nominal; none offering.

SEEDS

Prices in round lots, lb.:

Millet, recleaned.....5@5½
Flax .....8@8½
Hemp .....5½@6
Rape .....2½@5

Citrus Fruit Market

Los Angeles, July 31, 1918.

Auction markets have been very strong. All citrus markets have been helped by a shortage of fresh Eastern fruit. Large sizes have been discriminated against but regulars are in keen demand.

Coming crop is being more closely estimated and it is now thought that Northern and Central California will not have more than a 50 per cent crop, and the Southern crop not far from 70 per cent of normal. As fruit gets larger inside of tree setting is more apparent.

Lemon market is likewise very strong notwithstanding the large supply of forelgns. There are now on docks or afloat not far from 150,000 boxes.

Shipments

Shipments of citrus fruits to date since November 1, 1917: Southern California: oranges 12,491 cars, lemons 4502, total 16,993. To same date last season, oranges 34,726, lemons 6749, total 41,475. Central California this season; oranges 2536, lemons 115, total 2650. Last season to same date; oranges 4655, lemons 164, total 4819. Northern California; oranges 203, last year same date, 845.

AT THE AUCTIONS

July 24

New York: 7 oranges, 1 grapefruit, 4 lem. Oranges higher. Val. 6.70-9.00, grapefruit 3.30-6.45, lem. 5.00-7.60.

St. Louis: 1 Val., 2 lem. Val. 5.15-6.40, lem. 2.85-5.20.

July 25

New York: 7 oranges, 3 lem. Val. 6.90-9.15, lem. 5.95-7.05, grapefruit, 4.00-5.45.

Boston: 2 Val. 2 lem. Val. 6.60-7.40, lem. 6.80-7.75.

July 26

New York: 4 oranges, 4 lem. 1 grapefruit. Val. 6.85-9.25, lem. 4.20-6.20, grapefruit halves 3.15-3.40.

Boston: 2 Val. 2 lem. Val. 7.30-8.00, lem. 5.55-7.10.

July 29

New York: 11 oranges, 2 grapefruit, 4 lem. Higher. Val. 6.90-9.85, lem. 4.60-7.35, grapefruit 5.05-7.50.

Boston: 3 Val., 4 lem. Val. 6.25-8.95, lem. 7.00-7.55.

St. Louis: 1 Val., 1 lem. Val. 6.05-6.35, lem. 5.55-6.90.

Philadelphia: 2 Val., 4 lem. Higher. Val. 6.70-9.35, lem. 5.40-8.40.

Cleveland: 2 Val., 1 lem. Val. 7.70-7.75, lem. 4.90-7.95.

July 30

New York: 6 oranges, 1 grapefruit, 3 lem. Large offs lower. Val. 6.10-9.45, lem. 3.75-6.35, grapefruit halves 2.60-3.55.

Boston: 1 car. Lem. 3.10-7.05.

Philadelphia: 2 Val., 3 lem. Val. 7.95-9.10, lem. 4.95.7-10.

WEATHER CONDITIONS

San Francisco, Cal., July 27, 1918.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	.06	.20	.11	64	50
Red Bluff	.00	.00	.00	100	64
Sacramento	.00	.00	.00	96	54
San Francisco	.00	.00	.01	74	53
San Jose	.00	.00	.00	90	50
Fresno	.00	.00	.00	100	60
San Luis Obispo	.00	.00	.01	80	48
Los Angeles	.00	.08	.00	88	60
San Diego	.00	.00	.00	72	62

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FOR SPOT CASH

We positively pay highest cash prices for used motorcycles.

Get your 1918 INDIAN while they last. Easy terms. We also sell Indian bicycles. Drop us a line.

Indian Distributors

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Make your Ranch and Orchard produce the limit while prices are high by the use of High Grade Fertilizer.

Nothing Better Than Fish Tankage

Prices on Request

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Gardner's Bean Harvester

meets the requirements of the rancher and is within easy reach of all.

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900 E. Fourth St., Santa Ana, Cal.

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DUPLEX-PLUNGER
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Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

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National City, Cal.

Manufacturers of
ESSENTIAL OILS AND CHEMICALS

Citrus By-Products a Specialty

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Fleur de Soufre, Anchor Brand Velvet Flowers of Sulphur and Eagle Brand.

Packed in barrels and double sacks, are the fluffiest and PUREST Sulphure that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

Try our new brand of sublimed 100 per cent pure VENTILATED Sulphur for making Paste — Atomic Sulphur.

For Lime Sulphur Solution, use our S BRAND Refined Flour Sulphur which we will furnish at a price so cheap that you cannot afford to purchase ready-made solutions.

SAN FRANCISCO SULPHUR CO.,
824 California Street, San Francisco, Cal.

We are equipped to make immediate shipment. Send for illustrated booklet; also price list and samples

The Why of the Moist Mash

Written for California Cultivator By Jean A. Koethen

THE moist mash occupies a peculiar position among poultry rations. Nobody has much to say in its favor, yet it is almost universally used. Some experts go so far as to condemn it, but the rank and file of poultry keepers go right on using it. They do not all mix it in the same way, nor feed it at the same hour nor to the same class of fowls, but in some shape or other they all use it.

There seems to be no rule in poultry husbandry that may not now and then be broken, no "best" way of doing anything, but the fact is the wet mash has always been used. Long before anybody thought of the dry mash women were mixing bran mashes for their hens. Sometimes they made the mash of bran and hot water. Sometimes they added vegetables, raw or cooked. The poultrymen of the South Coast roaster colony in Massachusetts, long before poultry keeping had attained any standing as either industry or science, daily hauled a big mess of moist mash around to their hens. This was all the hens got except what they picked up on range and a daily feed of grain, and they did wonderfully well.

Tom Barron openly declares that he uses a moist mash and could not get on without it, and most experiment stations, while they do not advocate using the moist mash instead of the dry, recommend a daily meal of moist mash in addition to the dry. This is usually given early in the afternoon, and is, if possible, mixed with sour milk. Sometimes the dry mash which is fed in the hoppers is moistened with the milk, without the addition of anything else. Sometimes vegetables are cooked and the liquor in which they are boiled thickened with ground grain. On one big poultry ranch I found the owner busy mixing his moist mash with semi-solid buttermilk. I think he added cut alfalfa to the mash before feeding. Many persons do. Another man told me he always fed a mash, moistened with buttermilk, to his pullets in the fall. This man fed the mash the last thing at night, when the pullets' crops were already full of grain. The other fed it at two o'clock. A third man soaked rolled barley or oats over night and in the morning mixed it crumbly with the regular dry mash. This man fed in the morning.

The consensus of opinion seems to be, that while the moist mash by no means takes the place of the dry, and while it is perhaps not wise to use it constantly, as an addition to the regular ration, and especially when a little extra stimulation of the appetite is required, as in the case of maturing pullets or molting hens or fattening fryers or chicks that do not grow as they should, there is nothing like it.

For one thing, the moist mash is a convenient vehicle for a greater variety than can be fed satisfactorily in any other way. You may, of course, tumble your table scraps into the run just as they come from the table, set your pans of buttermilk on the ground and throw in your greens just as they come from the stem. Cooked and mixed they are vastly more palatable, and the ground grain mixed with them is just so much extra. Why do we feed grain ground instead of whole anyway? Isn't it just so the hens can digest a greater amount? The addition of the moist mash to the dry gets just that much more mash into the hen's crop, for she will always find a place for what she likes. The moist mash is to her what pie is to man, unnecessary but delectable.

And so it really simmers down to a question of palatability. Mrs. Biddy eats moist mash because she likes it. Why she prefers it to dry is not so easy to say. It may be because of the bits of vegetable or green she is able to fish out. Perhaps it is the element of uncertainty that appeals to her. Perhaps it slips down a bit more easily. Anyway, all chickens like it, and if wisely fed it does them good. The secret of using the moist mash is to give always a little less than the birds want. There must never be any left over. If it stands in the sun and sours the chickens will either eat it at the expense of their health or let it lie and waste. Give them just what they will clean up eagerly and there will be neither indigestion nor waste.

Honey Producers Exchange

The California Honey Producers' Cooperative Exchange has become an entity, having completed its organization in Los Angeles June 30. The Western Honey Bee reports ten local exchanges organized and delegates appointed. The delegates met in the office of State Market Director Weinstock in San Francisco June 26 and formed the preliminary organization, to take the place of the promotion committee appointed by the State Beekeepers' Association.

The board of directors met again on July 15. Temporary officers selected were J. D. Bixby, president; R. F. Gunterman, vice president; M. C. Richter, secretary; L. E. Jacobus, treasurer; A. B. Massey, manager.

Offices have been secured in the new Wholesale Terminal building on Seventh Street, Los Angeles, and the exchange expects to be in shape to handle the bee products of its members by August 1. The following local exchanges have been formed and received their charters from the secretary of state:

Superior California Honey Exchange, comprising Sacramento County and all counties north.

Central Valley Honey Exchange, San Joaquin, Stanislaus and Merced Counties.

Southern San Joaquin Valley Honey Exchange, Madera, Fresno, Kings, Tulare and Kern Counties.

Inyo Honey Exchange, Inyo County.

Los Angeles Honey Producers' Exchange, Los Angeles Conuty.

Orange Belt Honey Exchange, Riverside and San Bernardino Counties.

Orange County Honey Exchange, Orange County.

South Coast Honey Exchange, Ventura and Santa Barbara Counties.

San Diego Cooperative Honey Exchange, San Diego County.

Imperial Honey Exchange, Imperial Valley.

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NORWALK TIRES

Tough but Supple
Strong but Resilient

These casings embody every desirable feature. They've mastered the mileage problem, cutting the tire cost per mile to the very core. Try Norwalks.

Factory Distributors

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Corner Pico and Hope Sts.
Los Angeles

San Francisco Fresno

Eggs all through the MOULT!

SHORTEN the moult and lengthen the laying. Globe A-1 Mash (dry buttermilk added) will do it. The live lactic acid bacilli in the dry buttermilk will keep your flock in glowing health: (bulletin 162 U. S. Agr. Exp. Sta., Berkeley).

For Hogs A-1 Hog Feed 10% dry buttermilk) will save from $6 to $12 on fattening each hog.

Fact Book for poultry and hog raisers sent free.

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Fact Book A-1 POULTRY FEED

Buttermilk GLOBE A-1 Dry Mash

"Sodium Fluoride, recommended by the U. S. Department of Agriculture as highly efficient in destroying lice on poultry, is the principal ingredient in

Talbot's Chicken Lice Powder

For further particulars ask your dealer or write

Talbot Mfg. Co. Los Angeles

the DEVIL SAYS

A Killer of Lice and Mites

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Devils Dust has been tried and proven by long usage, thousands and thousands of packages have killed millions and millions of lice and mites.

Why experiment with new fangled "dope" when you know Devils Dust will do the work. Harmless to Poultry, Stock or Plants.

Sold Everywhere GLOBE MILLS Los Angeles

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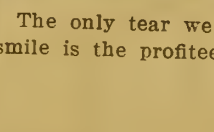
Try COULSON'S EGG FOOD
FOR GREATER EGG PRODUCTION
FULL PARTICULARS IN FREE BOOK
"CHICKENS FROM SHELL TO MARKET"



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You can free yourself from the physical exhaustion resulting from farm drudgery if you use G-E motor-driven machinery to milk your cows, separate cream, churn butter, cut feed and ensilage, saw wood, thresh grain, pump water and perform the many other tasks which make up the necessary activities of the working day. The cost for power is less than the wages of one farm hand. Ask your lighting company or our nearest office for full particulars.

General Electric Company

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RECORDS made by over 150,000 practical farmers buying over $10,000,000 worth of Fairbanks-Morse "Z" Farm Engines have never been equaled in Engine history.

Demand, as they did:

1. Fairbanks-Morse Quality.
2. Economy in first and fuel cost, and low upkeep.
3. Simplicity and Staunch Durability.
4. Light-weight, Substantial, Fool-proof.
5. Gun-barrel Cylinder Bore.
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You Also Get Service from your Local Dealer

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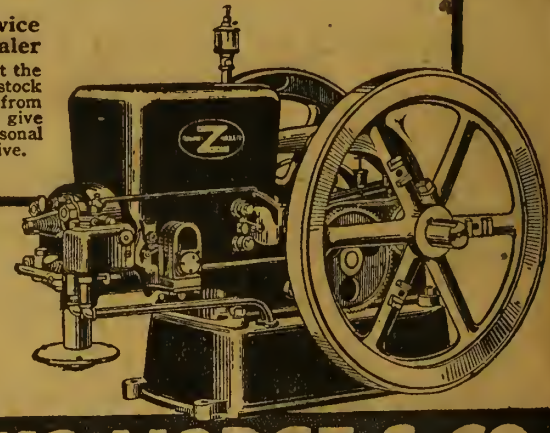

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Full weight—Galvanized

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Metal makes the most satisfactory roofing for farm buildings or city construction.

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AMERICAN SHEET AND TIN PLATE COMPANY, Pittsburgh, Pa.

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THE FARQUHAR VIBRATOR SEPARATOR

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Eleven different models, with or without Engine, mounted complete
Ranging in Price from $210 to $1,000
All Repair Parts Carried

Guaranteed by "The House of ARNOTT"
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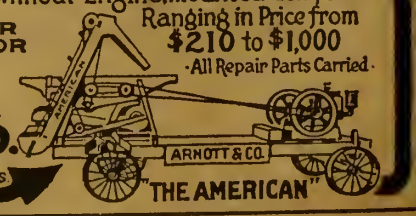

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — August 10, 1918 — No. 6

Pure Breds at San Luis Obispo School

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877 Combined with California Cultivator 1914. Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916.

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Live Stock: W. S. Guilford, C. L. Hughes, C. A. Briggs.

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Copy for change of advertisements must be in the office on Saturday preceding date of issue. New advertising copy must reach the office not later than Tuesday to insure insertion.

Advertising rates furnished on application.

The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

Member

Eastern Offices:
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S. E. Leith, Fifth Avenue Building, New York
C. A. Cour, Globe Bldg., St. Louis, Mo.

Entered at the Post Office at Los Angeles, California, as Second-Class Matter.

Saturday, Aug. 10, 1918

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

A private room for every calf may hardly be essential, but the dairyman at the State Polytechnic School, San Luis Obispo, finds more satisfactory results in raising valuable calves by giving to each his quarters exclusively. He says there is less chewing of ears and chasing around the yard, which causes some discontent if not injury. Hence the pens shown in the cover illustration this issue. At nominal expense a narrow extended runway with a bit of shade is given to each, that is, excepting in case of overcrowding, when like dispositioned youngsters are sometimes put together.

The scheme may not be readily adapted to all ranches but offers a suggestion to the careful breeder.

This photo, also the others on third page of this issue, taken with the Cultivator camera.

SAVING SUGAR?

A few months ago when Lord Rhonnda was alive and food director of England he was informed by his department heads that the amount of wheat which America had estimated after the last harvest as available for export had been exhausted. He threw up his hands and said: "The war is lost." In fact, he sent a cable to that effect to Food Administrator Hoover. Hoover replied that Americans were ready to do more than had been expected of them and more wheat would be sent. Then followed the most strenuous voluntary food conservation campaign which this world has ever seen. Thousands of large hotels and food distributors and thousands of families volunteered total abstinence from wheat products. England, France and Italy were supplied with wheat; their fighters were kept fit; and we are winning the war.

Now about sugar. The Italians are allowed one pound per month each; the French, one pound and a half; Americans are still allowed two pounds each and, in addition, such amount of canning sugar as is necessary. Grocers are selling under most rigid regulations, and it will be increasingly difficult to secure more than our share, but regardless of regulations we must win the war, and sugar is a factor. Are we voluntarily saving on sugar?

KEEP YOUR BOND

During the past week the papers have referred to a three year sentence in federal prison for a Liberty Bond speculator who in order to secure more satisfactory terms made claims that America would be unable to win and that Liberty Bonds would be of little value when Berlin had finished with us. He succeeded in purchasing some $100 bonds for $85. There will probably be no other such flagrant case of disloyalty, at least in this matter of bonds. Notwithstanding that, there will be many who may be easily discouraged or wish immediate spending money, who will throw their bonds, in fact are doing so today, on the market at a slight discount. The chamber of commerce of the United States is giving the warning and urges:

"Don't be swindled out of your Liberty Bond.

"If anyone tries to trade you out of your Liberty Bond, don't trade.

"If tempted to consider a trade take the trader to the nearest bank and ask the banker to check the value of the thing offered.

"If you must absolutely have the money your bond can always be sold for cash in the open market and the daily papers will tell you what it is worth.

"Keep your bond until the end of the war. Go without something you need rather than sell it. Your bond is your substitute on the fighting front. To part with it takes you out of the fight.

"Instead of selling the bond you own buy another one to keep the first one company.

"Liberty Bonds are the best security on earth today.

"They are the promise of the United States government to pay you interest twice a year and to pay the face value of the bonds when due. Their safety is the reason they carry a low rate of interest. Detach each coupon on the date it bears, take it to a bank and deposit it to your account, or draw the cash value.

"Register your bonds, and keep them where they cannot be lost, stolen or destroyed. Go to a bank for information—many banks offer facilities for safe keeping of bonds. To lose an unregistered bond is the same as to lose that amount of money."

CREDIT CREDITABLE

Editor Saylor of the Pacific Dairy Review gets off entirely on the wrong foot when he says: "A local paper in one of our California farming communities seems to take considerable pride in the fact that its community leads in making loans through the federal land bank. It seems to us this enterprise is in the wrong direction. Borrowing may be necessary at times, but it is seldom anything to blow about."

If the world's business, either in peace or war, were all transacted on a strictly cash basis and left in the hands of only those who had cash to conduct business, there would be a vast shrinkage in commercial transactions. The man who does not use credit to enlarge his business transactions may not because of fortunate circumstance which has placed sufficient capital in his hands, or it may be because he has no credit.

The fact that the government of the United States or, more directly, the federal land bank, is willing to lend largely to the people of any community, indicates belief in the inherent value of the land; also that it is farmed by people of ability to pay out the loan. The borrowing of funds to be used in the purchase of a joy wagon might well be considered nothing "to blow about," but the borrowing of funds for the purchase of better farm equipment, even if a part of that equipment is an auto or trailer which aids in swifter marketing of cream or other perishable product, is not only wisdom, but a most patriotic act these days when labor shortage is one of the farmer's most perplexing problems.

VOLUNTEER—SELECTIVE

A young man of draft age in the superior court of Los Angeles County confessed to a crime with which he had been charged and requested of the judge that he be sentenced to the army. The judge quickly declined, sentenced the prisoner to several years in the state penitentiary and informed him that the United States army is not a place for law violators, but is filled with some of the best blood of America. This reminds us that we have often heard volunteers in the service call attention to the fact that their particular company, regiment or division is made up of quite exclusive best young people of the country because of the fact that they are volunteers. We wish to take no honor from the young men who are volunteering their services and even their lives; likewise there must be equal honor given to those who have been selected by the United States to support its flag, and any reference to their service which lowers the honors due to them should be discouraged.

BONDS SOLD

The federal land bank announces that there are now farm loan associations in all the states of the Union. The associations total 3100. The Wichita district leads with a total of 398 associations. The Berkeley bank totals 145, 106 of which associations are in California, making California one of the leaders in organizing associations. The farm loan board announces that all the first issue of bonds, $60,000,000, has been sold, and for the time being no more bonds are to be had except from the original purchasers who are now demanding a premium. Another issue will be made next November.

This Week's War Notes

"Huns in New Retreat" has been scare headline in daily papers nearly every day during the past week. The Allies are apparently following the retreating Germans very cautiously, but every day notes advances. Fere en Tardenois and Soissons, both important munition distributing points of the Germans, have been captured during the week. It had been expected that the enemy would dig in at the Vesle and refuse further retreat. As the Vesle was reached the fighting has been more severe, but already the Allies have crossed it in several places. Americans are in the thickest of the fight. The list of casualties to American boys has been immensely lengthened, and columns in the daily press are now required to give list of killed and seriously wounded. The first criticism of the behavior of the American troops is yet to come; only highest praise is given. The line in Belgium and Picardy has been more quiet, though the English have advanced in a few short sectors and artillery has been active.

Allied forces are being landed at Archangel, and a strong detachment of Allied troops is now at Kola, farther north. There are American troops at both places. The population of Archangel received the troops with great enthusiasm. Diplomatic representatives of Allied governments are leaving Vologda, forced to that step by the Bolshevik government which six weeks ago ordered all cable communications stopped between Allied ministers and their governments. Bolshevik forces which were near Archangel have been driven farther south; they carried away 40,000,000 roubles. On the Eastern coast Bolshevik forces north of Vladivostock are known to be receiving reinforcements.

The Germans are finding great difficulty in organizing the productive interests of southern Russia, especially in the Ukraine, and even the German and Austrian soldiers are continually manifesting hatred for each other. At one point an army of 25,000 Russian peasants is being armed, who burn their own houses and stores rather than let them fall into the hands of the Germans.

The new draft law soon to be passed will probably raise the draft age and it will stand at 18 to 45. Provost-Marshall-General Crowder urges the immediate passage of the bill and suggests September 5 as registration day.

Field Marshall Haig, on the war's anniversary, declared: "The war's crisis is passed; the steady stream of American troops is bringing the Kaiser's downfall."

Tokio has officially announced her intention of sending troops to Siberia and aiding in the restoration of Russia, and it is declared; "No Russian soil will be retained by Japan."

Submarines are still on the western side of the Atlantic. Occasional sinkings are reported, and many now believe that the sinking of the San Diego was due to a submarine.

Oakland has won the world's record during the past week, launching the great steel cargo carrier Invincible, 12,000 tons capacity, in 24 days from laying keel.

There will be 2,000,000 American troops in France before the first of October, and promise is made that an army of at least 5,000,000 will be in training at home.

"The enemy evaded us, and we thereupon broke off operations and retired fully masters of the situation" is report of Gen. Ludendorf.

The line running from Saloniki to the Adriatic has been comparatively quiet, though rumor persists that important advance will be made.

Liberty Bonds of the first issue have sold during the past week at par in open market of New York.

Great Britain has raised 7,000,000 men for the war, 5,000,000 of whom are fighting on foreign soil.

"Hold fast" is Lloyd George's anniversary message to his own people.

More than 250,000 Christian Greeks have been deported by the Turks.

Making Better Farmers of California Boys and Girls

By C. B. Messenger

MAKING the school house a feature of the community life is one of the aims of California Polytechnic School at San Luis Obispo. This school is an entirely independent state school operating under a special act of the legislature passed in 1901. This school was organized for the purpose of providing practical training for young men and women of the state who desire instruction more closely identified with the farm, the shop and the home than is that of the ordinary high school. This perhaps accounts for the interest manifested in the immediately surrounding homes and farms. Of course, the high school and all schools of the country are taking more interest in the home life of their pupils than was the case a few years ago. School houses, formerly as tightly closed as was the "front parlor" of the olden days, are today a neighborhood gathering place.

But San Luis Obispo Polytechnic, devoting largely of its activities to agricultural training, is brought closer to an agricultural community than are the other schools. In this respect it is uniting with the state university in encouraging the university pig clubs or any other club or movement which looks towards higher and better production. This school encourages installation of silos and the formation of cow testing clubs. It is urging farmers to keep books and to know cost accounting.

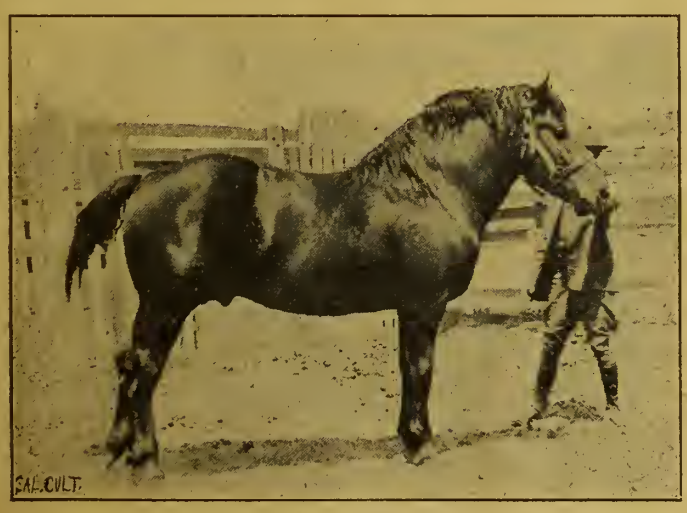
The direct influence on the home life is shown by incidents such as this, referred to by Director R. W. Ryder in a few moments' conversation with the writer at the school recently. One young man not far from 16 years of age, born on a San Luis Obispo County farm handled by his father for many years and producing only indifferent results, through the influence of his mother was permitted to attend the Polytechnic and, believing his text books and instructors, went home at vacation time with urgent request to his father for deeper plowing on the farm. The father had farmed many years by the old time methods and he persisted. Finally he gave the boy one acre as a test plot. One year's experiment convinced the father, and now the boy is the "foreman" of the ranch, more productive than formerly.

One striking feature of the Polytechnic School is the reduction in the age of the attendants. The first few years of the school the pupils were almost entirely young men 21 to 23 years old, or young farmers who felt the need of better training before going on with their farm work. Now the average is around 15 years, and last year no boy attended the school who was not under 18 years of age.

The character of the influence and technical training of the school is shown by the fact that 135 of its former attendants and graduates are now in the service, most of them either in the aviation or engineering divisions and many already having commissions. Notwithstanding war conditions, the school anticipates next year enrolling 200 to 250.

R. W. Ryder

Director of the California Polytechnic School at San Luis Obispo. Prof. Ryder has been in charge of the school for several years, and in addition to being an educator is a most practical farmer, personally conducting the affairs of his own ranch.



Polytechnic Percheron

Notwithstanding the director of the school believes the demand for the medium sized horse will continue to increase, good types of Percherons and Shires are retained on the school farm for educational purposes. The school also has high types of saddlers and light buggy horses.

A Renewed Silo

This is one of the older types of cheaply constructed silos. It worked satisfactorily several years when it became so leaky that it was a candidate for the discard. The director of the school, anxious to save expense of building a modern silo at that time, conceived the idea of lining it with roofing paper. Ordinary three ply roofing was secured, and the inside of the silo was lined from top to bottom, the same method of applying the paper as if for a regular roof. This has been given some three years test with the result that the silage is keeping perfectly. The cost was between $1.25 and $1.50 per square of 100 feet.

The school is conducted like a big farm home. The girls have their domestic science, with practical instructors. The boys devote part of their day to technical school work and more to practical farm or shop operations. There are pure bred Jerseys and Holsteins, Poland-Chinas and Berkshires, Percherons and Shires, even the poultry being well bred. Tractors and up-to-date implements are handled by the boys in farm operations. Each attendant is expected to operate on an acre or less of ground and to produce practical results with a minimum expenditure of effort.

There were formerly 311 acres in the farm, but a recent purchase has added 625 more, making nearly 1000 acres, much of it tillable for practical farming operations. Director Ryder believes in the boys keeping account of the results of their own efforts and knowing how much each farm operation costs and how much it returns. More, he believes in boys and girls of California being bigger and better than boys and girls of former generations.

THE INTERSTATE QUARANTINE CONFERENCE

Commissioner Hecke writes that he is in receipt of a recent communication from the governor of Lower California in regard to the coming interstate quarantine convention to be held in Riverside in November. Governor Cantu has expressed himself as greatly in favor of such a convention and states that he will be pleased to have Lower California represented thereat. With the receipt of Governor Cantu's letter a complete list of the Rocky Mountain and Pacific states, Canada, Hawaii and Lower California have recorded a unanimous opinion in favor of such a convention and have expressed a desire to be represented. The official invitations have been sent out by Governor Stephens to the governors of all the states above mentioned, asking them to send delegates to the conference. Among the suggestions which have already been received from the different states as to the points which should be brought up are—first, what constitutes an infestation; second, the subject of uniform inspection methods.

Maternity Pens

Side hill construction is responsible for the stepping-down appearance of these roofs. The runways are on the opposite side of the houses. The small enclosures on the side toward the observer are concrete with shallow wallow, or dip, built in the concrete. At time of farrowing the wallows are emptied, but before farrowing the sow has the choice of the concrete feeding floor or the wallow, the interior of the house, or the freer range of large corrals beyond.

Agricultural News Notes of the Pacific Coast

Northern California

Experiments in cotton raising in Yolo County have been very successful.

The Sutter-Butte Canal Company is making improvements in the heading and dam at Pacific Heights.

The cannery at Yuba City, Sutter County, is now running full handed, principally on peaches.

The El Dorado County farm bureau has secured a tractor threshing outfit. Work has begun in the Fair Play district.

State Viticultural Commissioner Jeffrey is visiting vineyard sections of the state, looking over crop conditions.

The El Dorado farm center has asked government investigation of the proposed irrigation district in the county.

California dried fruit packers will allow only one cent per pound manufacturing and packing cost on 50-pound boxes.

Farm Adviser Amundsen of Placer County is spending his vacation studying blight resistant pear stocks in Southern Oregon.

The plant of the Olive Products Company at Oroville will be enlarged so that it can operate throughout the year on other products.

Pear growers who were held by term contracts have been allowed $10 more per ton through the good offices of the food administration.

Vineyardists of California have appealed to the President to save the wine industry of the state from confiscation through prohibition.

The livestock marketing committee of the Sonoma County farm bureau is planning for a series of auction sales of livestock, particularly hogs.

Yuba County farmers are investigating grain handling methods, and it is predicted another year will see a large number of elevators erected.

Red Bluff wool growers are receiving checks direct from the government for wool clip. Prices are averaging around 74½ cents and return is made for wool sacks at the rate of 50 cents each.

The Placer County farm bureau Weekly compliments the fire fighters of Lincoln and other sections because of quick response and effective work at various field fires.

Butte County objects because in apportioning the sugar to the county the food administration has done so on the basis of 25,000 population. This only gives 50,000 pounds for the month of August, whereas the requirements of the country called for 125,000 for the month of July.

The California railroad commission has served notice on a large number of electric power companies in Northern and Central California in effect that during August and September, except Saturdays, Sundays and legal holidays, no electrical energy shall be used for advertisements, ornamental lighting, etc.

Yolo county is planning a new squirrel offensive. County Horticultural Commissioner Gould says: "The grain is practically all cut, and the distribution of the poison will get better results than at any other period of the year. Every farmer will be expected to lend full cooperation. It is estimated that each pest ruins a dollar's worth of crops each year."

Central California

Merced County farm bureau is organizing wool pools.

F. G. Tiffany is new assistant farm adviser in Merced County.

The alfalfa catterpillar is proving a serious pest in alfalfa fields of Kern County.

The Kern County farm bureau held an auction of fat hogs at Wasco, July 20.

Madera County's new farm adviser, Mr. Smyth, has taken charge. He is assisted by Harry Drobish.

An auto driver hitting 40 miles per hour on state highway had to dig up a $50 fine in Fresno County.

The bureau of markets is appealing to California peach growers to dry every peach and let none waste.

Tulare County is making liberal fresh grape shipments. One plant at Woodlake will ship at least 60 cars.

Watsonville reports presence of cottony cushion scale and is endeavoring to secure sufficient vedalia to control the pest.

"Don't pick your grapes too early" is warning sent to all table grape growers. The percentage of sugar must come up to legal requirements.

Saloons in Monterey within the half-mile limit from military camp have been closed by federal order. This order also affects the Hotel del Monte.

Tuolumne County cannot collect taxes on dams and reservoirs of districts in another county is the ruling of the superior court of Tuolumne County.

The Visalia sugar factory, recently made the largest run in its history, sacking during the 24 hours 1560 sacks of sugar. The factory is as yet holding for instructions from Washington as to shipping.

Merced County farm center meetings: Irwin-Riverside, August 13; Delphi-Youngstown school, 14; Amsterdam, 16; directors, 17; Eschscholtzia, 22; El Nido, 28.

"No licensee is permitted to pay grower directly or indirectly prices in excess of those recommended by the food administration" is ruling of Fresno County food administrator.

At the recent annual meeting of the San Joaquin Valley Veterinary Medical Association, L. A. Danielson was elected president, and Dr. R. A. Ball of Fresno, secretary-tereasurer.

Several horticultural commissioners of the central part of the state aided in a raid on fruit shops in San Francisco recently, at which time hundreds of boxes of fruit were seized and condemned because of fruit pests.

Farm bureau directors of Merced County have arranged a scale of wages which the farmers unite in paying: Workers in hay, corn and bean harvest and irrigation, $3.00 per ten hour day; general farm, orchard and vineyard work, $2.50.

Cattlemen of Contra Costa, Alameda, Santa Clara, San Francisco, San Mateo, San Benito, Monterey, San Luis Obispo and Santa Cruz Counties, comprising zone No. 3 of the California Cattlemen's Association, met in Salinas on Friday, July 19, to discuss matters of interest to the cattle industry.

Southern California

Yucaipa is making plans for its fall apple show.

Over 300 tons of Hemet apricots were made into jam.

The tomato cannery at Hueneme began operations August 1.

The Oxnard sugar factory begins operation Monday, August 19.

Lemon growers near Oxnard are forming a shipping exchange.

The Ventura County Fair is planning to have a big tractor show.

California's production of pink beans will be the largest in its history.

Ventura County's fair management is planning for a big fair, September 30-October 5.

On the biggest apricot day of the season the Hemet canneries received 288 tons of fruit.

The University Citrus Experiment Station recently conducted fumigation demonstration at Santa Paula, Ventura County.

One apricot grower of Camarillo harvested 50 tons of green fruit against 650 last year.

Yucaipa and Beaumont apple growing districts estimate their output this season at about 25,000 boxes.

The interest in milch goats is increasing, and the recent exhibit at Covina afforded opportunity for many sales.

Sugar beets grown in Chino, San Bernardino County, section will all be shipped to the American Sugar Factory at Oxnard.

Inspector Redding reports some fire blight showing in the apple orchards of Yucaipa Valley, especially among Rome Beauties.

The Los Angeles city council has refused to amend its present bee ordinance prohibiting the keeping of bees within the city limits.

Several people along the Santa Barbara County coast have engaged in burning kelp gathered along ocean front, using the ash in potash production.

Despite many pests which have affected the Lima bean fields of Ventura County "Limas have never looked better" is reported of many of the districts.

Hemet, Riverside County, reports its apricot season as the shortest, lasting only about three weeks. The total crop of the valley was about 8500 tons.

It required 14 large buses to take away from Hemet and San Jacinto Women's Land Army helpers who had finished their season of work in the apricot orchards.

A representative of the state horticultural commission has been visiting various apple sections of the southern part of the state giving instructions as to requirements of the apple standardization act.

Now comes a new bean pest in the Zelzah fields. The pod turns yellow, careful examination showing red spot which is caused by puncture of a little red or brown bug. The pod usually contains small worm.

Bean growers of the southern part of the state will be more closely identified with cooperative marketing operations than ever before. The output will be immense, at least 100 per cent greater than 1916 or 1917 crop.

The Coast and General

Idaho farm bureaus are working for greater number of silos.

Utah ranges are getting dry and irrigation water low.

Idaho's fruit crop is little over 25 per cent of normal.

Nampa, Idaho, will hold a harvest festival September 17-21.

Many cherry orchards in New York had women pickers only this year.

The interstate fair will be held at Spokane, Washington, September 2-7.

Wool men of Idaho are protesting against prices fixed by hay growers.

Arizona has closed its cantaloupe shipping with record breaking output.

The Wenatchee Valley of Washington will this year ship 135 cars of apricots.

The Italian silk industry is recovering, and it is hoped it will soon be at normal.

New Mexico has discovered that the yucca plant of the desert has possibilities as stock feed.

"Beans and grain sorghums in southeast part of state are fair" is report from Arizona.

The food administration reports that the government will soon be in the market for 1918 beans.

Mutton producers of Western Texas are exceptionally prosperous because of long spring lamb prices.

Colorado potato shippers have formed an association to work in connection with the food administration.

Tasmania has sent a pomologist to Pacific Coast states to study fruits which may be adapted to that country.

Hawaii has a big crop of pineapples this year. It is expected that 1,000,000 more cases will be packed than last year.

Yakima, Washington, has finished its potato evaporating campaign. Over 6000 tons of potatoes were processed, which produced 1000 tons of dried material.

The food administration urges maximum amount of canning fruits and vegetables with minimum amount of sugar.

County agricultural agents of Idaho are striving to get sufficient amount of grain to feed the increased number of hogs.

Cotton fields in the Chandler district of Oregon show a 90 per cent perfect stand. There are 11,000 acres planted.

New Zealand exported $34,000,000 worth of butter during the past year. It required 42 steamers to transport this product.

The Texas peach harvest is now at its peak. It is expected that the Elberta shipments will run to 1000 cars this season.

The food administrator of Arizona has seized hundreds of pounds of hoarded sugar and flour from Mexicans at Sonora.

The Idaho-Oregon Honey Producers Association has named minimum prices on honey: Extracted, 18 cents per pound; comb fancy, $4.50 per case.

Washington reports the cool weather of May and June unfavorable to fruit production. The June drop has been very heavy and the depredations of aphis and worms have been serious.

What Shall The Harvest Be?

By Arthur L. Dahl

FOOD will win the war! From a mere slogan that sounded good to the ear, these words have grown to mean the serious purpose of this country, for food is short, not only in the war devastated countries of Europe, but in the midst of our own country. True, it is not short because we have not enough food to serve our own needs if we wanted to take a selfish stand and let the rest of the world starve, but as the commissary department for all the Allies and many of the neutral nations, we must forego that superabundance to which we are accustomed to help out the needy ones abroad. And we are all glad to do it, too, and the problem that now confronts the producers is how to grow enough grain and other food crops to meet the demands of the coming year.

Man power is needed on the farm as it is needed in the factory. When the supply does not keep pace with the demand in a manufacturing concern they make machines to do more work in a shorter time to make up for the shortage in human labor. On the farm the war has drawn heavily upon the sons and the laborers who till the soil and supply the power for producing crops, and in their time of need the farmers are turning to machinery to replace man power on the farm as it has in the factory. The tractor is taking the place of the hired man and the horses because, being a machine and untiring, it can work harder and for longer hours than human or animal power, and it is the most efficient substitute for the lacking men that can be found.

The tractor is revolutionizing agricultural work, just as the automobile has enlarged and broadened the life of the farmer and his family, for the tractor enables one person to direct more power than under old fashioned practices where horses alone were used. One man is needed to drive a team of horses and direct their operations, and the number of horses that can be handled by one man is limited to a very few. The tractor is developed to furnish a sustained power hour after hour, and up to the limit of its capacity it will chug along for long periods of time, requiring no rest and operating under climatic conditions which often put horses out of business. Neither extreme heat nor cold affects the tractor, and owing to its being equipped with endless belt or track-laying types of wheels, the tractor can operate on soft ground that would mire horses. The machines are now being largely used in rice fields where it is necessary to get onto the land for harvesting purposes as soon after the water is drained from the fields as possible, and in rice culture tractors are successfully used in mud where it is necessary to equip the cutting machines with pontoons.

The farmer with limited help at his command can be assured of getting his work done in time if he depends upon machinery, for farming is essentially a mechanical operation. The work of plowing, harrowing, cultivating and harvesting all depends upon power, and the most primitive, laborious and unscientific power is that furnished by the muscles of men, while the most uniform, scientific and satisfactory power is that derived from machinery. A modern tractor can do practically everything a horse can, and it can do a great many things impossible with the horse. In plowing the results obtained by a tractor are superior to those secured with horses, because, possessing more power, the plows can be forced deeper and the field, when plowed, will be uniform throughout, thus insuring better growing conditions for crops. It has been the experience of many farmers that increased yields, both in quantity and quality, have followed the use of tractors.

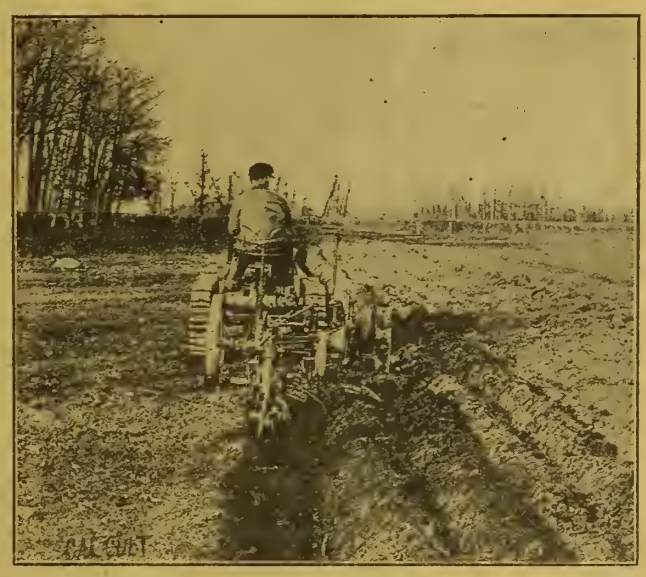
Machinery saves the time of the farmers during those periods when they are the busiest, and often the time so saved means the difference between a good crop and a poor one. In the matter of plowing, for instance, a modern tractor of the heavier type will pull a battery of three or four plows, all of which can be operated by the man in charge of the tractor. That same man, if driving horses, could only handle one plow, and both man and horses would require frequent rests during the day. The tractor with its battery of plows can work on continuously day and night until the field is plowed, and thus much valuable time is saved. Where weather conditions have retarded the work of plowing, or where winter sowing has been a failure and it is desired to plant the same field in the spring, the tractor has been of immense help to farmers in enabling them to get their work done promptly.

Tractor as Hay Loader

More and more the tractor is working in to nearly all phases of farming

The development of the tractor has also meant the development of other kinds of farm machinery, for new plows and harrows and cultivators have been designed to be used with tractor power, and many of these are so built that they can be operated from the tractor seat, thus doing away with extra help. So easily are the various levers manipulated that many women and the young daughters of the farmers owning machines now run the tractor outfits.

In possessing a tractor the modern farmer has a source of power which is available for a great many different purposes. The actual field work incident to the growing of any crop does not require all the time of a farmer and his equipment. There are long periods during the growing season when nothing is needed to be done in the fields, and during these periods the tractor owner can utilize the engine in his machine for doing belt work. It can be harnessed to a pump to fill water tanks or reservoirs, or power can be furnished to grind feed, crush limestone, saw wood, or a dozen other valuable uses. The many different ways in which tractors can be used increase their value, because with machinery, the longer the period of its operation the greater the efficiency obtained, and many owners of small farms who would not be justified in buying a tractor for field work find them a profitable investment when all the things accomplished are taken into consideration. In some communities the owner of a tractor will do work on adjoining farms under contract, thus helping him to pay for the machine and at the same time helping out his neighbors who need special work done. An increasing number of young men are also purchasing tractors and are going through the agricultural districts and doing plowing and other work for farmers at so much an acre. During the fall and winter months these men use their machines for sawing wood or grinding limestone or other work required by the local settlers.



Plenty of Power—Good Results

This is a good season of the year for fitting the ground for the coming planting, but it takes proper implements and sufficient power.

Tractors are also largely used for hauling big loads of grain or other farm products to market. Possessing great power, one of these machines is capable of hauling as many as half a dozen loaded wagons, and where heavy hauling is concerned the tractors can successfully compete with trucks or horses because of the saving of man power needed to operate them.

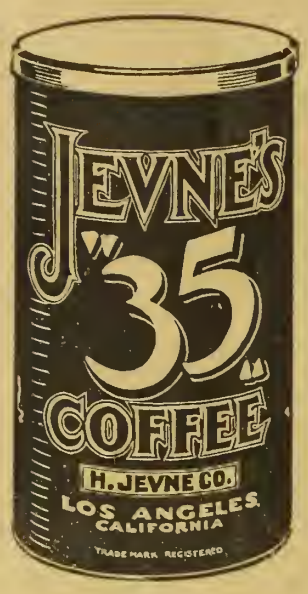
From a psychological standpoint the use of tractors and other farm machinery in agricultural work has resulted in keeping hired help for longer periods than where horses and old fashioned methods are used. Many farmers report that their men take unusual interest in operating machinery, and they accomplish more work and seem better satisfied with conditions where tractors are used instead of horses. This is probably due to the fact that most men like to run mechanical things, and in operating farm machinery the monotony and drudgery are taken out and the men find many things to interest them in performing their daily tasks. The hum of the machinery and the speed and regularity with which they see their work being done give an added impulse to greater accomplishments, and that element in human nature which is at the foundation of better work is appealed to in the men.

The tractor is still in its infancy, and during the years to come there will doubtless be many improvements made in the form and working abilities of these machines, but even now it is the most valuable tool on the farm and its use will go far towards enabling the farmer to accomplish maximum results with the minimum of effort, and in these days of scarcity of man power the tractor is the most satisfactory and dependable farm hand obtainable.

AMERICAN FARMERS MUST GROW SEEDS FORMERLY IMPORTED

War conditions have made it necessary for the United States to produce at home seed supplies that formerly were imported from Europe. "Temporary seed shortages have developed under new economic conditions, and they may continue," says the United States department of agriculture in "The Seed Supply of the Nation," a new publication recently issued as Yearbook Separate 757, "but farmers and seedsmen are resourceful and they may be expected to find ways and means to meet not only the needs of this country, but also those of other countries which may be dependent upon us."

Although, as a matter of necessity, seed production has increased in this country since the war, the experts of the department state that the possibilities of commercial seed growing in the United States have only been slightly developed. The publication mentioned may be obtained by seedsmen and those especially interested. It discusses at length the various American farm crops, from a viewpoint of seed supply.



A Lot of People buy twenty cent coffee because it costs twenty cents

But the family that drinks coffee for the aroma and flavor enjoyed at the table---wanting a coffee that suits its taste and pride, buys *Jevne's Coffee*

And too, some brands of coffee ought to be served in the sugar bowl or cream pitcher. All coffees make approximately the same number of cups to the pound, but *good* coffee requires less sugar and cream to meet your taste requirements. The thrifty housewife buys *Jevne's Coffee*---it's *good* coffee and needs less sugar and cream.

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LOS ANGELES

From a Californian in Tripoli

MANY Californians will recall with pleasure Dr. F. Franceschi, who for years lived at Santa Barbara, establishing there the Plant Introduction Gardens which were responsible for the bringing to California of rare plants from many parts of the world. Later he moved to Montarioso Heights and established the Montarioso Nursery.

Perhaps one of the best known of Dr. Franceschi's introductions is lippia repens which he secured from Italy and which has proved almost a wonder on ordinarily barren hillsides or in lawns where there is heavy tramping and wear.

Dr. Franceschi, or Fenzi, as he is now known, is in the service of Italy in Tripoli, having to do with plant introduction and, we believe, with general management of large colonization schemes in Tripoli. Some months ago we wrote Dr. Fenzi requesting information as to things agricultural in Northern Africa, and he writes:

"Your favor of February 2nd reached here with great delay, as it is usual now for all mail from California, and from everywhere. I must apologize very sincerely for my neglect, not entirely dependent from 'oriental environment', but principally by lack of matter worth to write about.

"Owing to the state of mutual blockade which has existed here since May, 1915, that is the rebels blockaded by us from the sea side, while they blockaded us from the inside, you may well imagine that not much could be accomplished up to now, and will not before the end of the war. Yet, something was done, and among other things the problem of reforestation was successfully taken up by planting of eucalyptus windbreaks. It has been proved by actual experience tbat it is quite possible to establish 'gums' in the so-called 'desert', and even on moving sands, by planting them during the winter, and without watering them at all afterwards. Several kinds were tried, of which the 'red gum' (E. rostrata) is the most promising, while the 'blue gum' is a complete failure.

"I must express my sinceres tthanks for the Cultivator, of which only a very few numbers did not reach me, and I can assure you that it is always most welcome, not only to me, but also to my wife and daughter. It is always full of interesting matter, and it makes us feel in touch with never forgettable California, while we are particularly admiring its practical and most efficient work in behalf of the war.

"The country which is now known as Libya stretches from east to west on the northern coast of Africa, between Egypt and the Regency of Tunis, reaching south of the 25 degree parallel, and occupying a surface of 1,500,000 square kilometers, that is about ten times as large as California. Most of this surface is now called desert, but it is not true desert wherever water can be brought to cooperate with the sun and foster vegetation. There are no rivers in Libya and no high mountains, except near its southern border, but there is plenty of water stored underground, owing to the winter rains. These amount to about the same as at Los Angeles, and on account of the geological and physical conditions of the soil, they all soak in, being prevented from running down to the sea. It has been calculated that on the coast region of Tripolitania proper, namely from the Great Syrt to the French boundary line, some 17,500,000,000 cubic meters of water are stored on an average every winter, which are available for irrigating about 300,000 square kilometers of good, tillable, frostless land. It is in this region that Italy is now taking her first steps of colonization.

"Just like in Southern California the culture of fruit trees is sure to prove the most profitable in Libya, and almost every one of them will be in common to both countries. But, on the standpoint of colonization, the greatest difference exists in their demographic conditions. In fact, when in 1848 California was annexed by the United States the bulk of its surface was practically government land, and its inhabitants were only a very few thousand harmless aboriginal Indians or Mexican Spaniards, while the population of Libya cannot be estimated much under one million, and a rather thorublesome people at that. The records left by Sallustius and Julius Caesar two thousand years ago are fitting exactly the Libyans of today, with the aggravating circumstances that mohamaddan fanatism and intolerance were since grafted on top of their far from commendable native qualities. It has been shown however, by the experience of these last three years that the sedentary population, thickly settled as it is on the limited areas of the Oases along the coast, if properly handled, will prove peaceful enough, and susceptible to a certain extent of agricultural progress.

"The rebellion of 1915, started by German gold and kept up by German submarines, has improved in one way our possibilities of colonization, having swept away almost all claims of the nomadic tribes to pasture on sections well capable of culture. Plenty of pastures are left for them further in land, away from the coast, and efficient means are sure to be adopted to prevent repetition of troubles. When the world's war will be over, and a perennial stream of vigorous, industrious Italian peasants will be headed this way, the work of colonization will steadily proceed, starting alongside the railways, of which more than 200 kilometers are now built."

JUNE DROP

By R. R. Snowden

Referring to your editorial in July 27th number on the June drop of oranges: Among the "numberless other things and conditions" which might cause the June drop, I wish to mention prominently this one in particular, namely, a deficiency in the soil of one or more of the elements necessary to the formation of the proteids. Those most likely to become deficient are sulphur, phosphorus and nitrogen. More than six years ago the writer discovered the importance of sulphur in this respect, and since then has many times demonstrated the correctness of his conclusions. For instance, after a deficiency of sulphur was found by analysis in the soil of H. E. Gilley's orange grove in Tulare County the grove was given treatment to supply simply this one need. Note the result: His last season's crop was 65 per cent of full, while all the neighboring groves produced but 15 per cent crops.

SULPHUR

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards six times they will not be affected by mildew or red spiders.

FLEUR DE SOUFRE AND ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand, packed in double sacks, are the fluffiest and purest sulphurs that money can buy; the best for orchards and vineyards; the best for bleaching purposes, LEAVING NO ASH.

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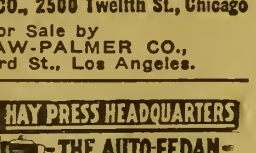
has become so popular in its first three years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load



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Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

FRUITS GROWN IN DIFFERENT COUNTIES

From report of Chief Deputy Horticultural Commissioner Weldon on estimated per cent of normal fruit crop grown in main producing counties of the state:

Almonds.

San Joaquin and Yolo Counties, each 4 per cent; Butte 13, Contra Costa 10, Sacramento 8, Sutter 8, Stanislaus 7, Solano 5, Colusa 4, Riverside 4, Merced 2, Alameda, Glenn, Lake, Los Angeles, Napa, Placer, San Benito, San Luis Obispo, Santa Clara, Tehama, Yuba, 1 each.

Apples.

Santa Cruz 51 per cent, Sonoma 16, Monterey 12, Nevada 3, San Bernardino 4, Humboldt 2, Los Angeles 2, Butte 1, Inyo 1, Mendocino 1, Napa 1, Placer 1, Riverside 1, San Benito 1, San Diego 1, Siskiyou 1, Tehama 1.

Apricots.

Santa Clara 20 per cent, Ventura 10, Alameda 8, Kings 8, Riverside 8, San Bernardino 6, Los Angeles 5, San Benito 5, Fresno 4, Orange 3, Solano 3, Yolo 3, San Joaquin 2, Santa Cruz 2, Contra Costa, Glenn, Kern, Madera, Merced, Monterey, Napa, Sacramento, San Diego, Sonoma, Stanislaus, Tehama, Tulare 1 each.

Cherries.

Santa Clara 24 per cent, San Joaquin 15, Placer 10, Solano 9, Alameda 8, Sonoma 7, Sacramento 6, Napa 4, Contra Costa 3, Riverside 2, Santa Cruz 2, Butte, Nevada, San Benito, San Bernardino, Santa Barbara, Siskiyou, Stanislaus, Sutter, 1 each.

Figs.

Fresno 60 per cent, Merced 10, Tulare 10, Stanislaus 5, Sutter 3, Yolo 3, Butte, Los Angeles, Madera, Yuba 2 each, San Joaquin 1.

Lemons.

Los Angeles 31 per cent, Riverside 16, Ventura 15, San Bernardino 13, San Diego 10, Orange 7, Tulare 5.

Olives.

Alameda 14, Los Angeles 10, Riverside 10, San Bernardino 6, San Diego 6, Tehama 6, Tulare 6, Santa Clara 6, Sacramento 5, Sonoma 4, Ventura 4, Fresno 3, San Luis Obispo 3, Yolo 3, Yuba 3, Madera 2, Santa Barbara 2, Contra Costa, Merced, Napa, Orange, Placer, Shasta, Stanislaus, 1 each.

Oranges.

San Bernardino 31 per cent, Los Angeles 26, Riverside 14, Tulare 13, Orange 10, Ventura 2.

Peaches.

Fresno 25 per cent, Kings 7, Placer 7, Tulare 7, San Joaquin 6, Stanislaus 6, Santa Clara 5, Sutter 5, San Bernardino 5, Los Angeles 4, Butte 3, Riverside 3, Siskiyou 3, Tehama 2, Yolo 2, Kern, Madera, Sacramento, Sonoma, 1 each.

Pears.

Sacramento 20 per cent, Placer 12, Santa Clara 8, Solano 8, Lake 7, Contra Costa 6, Sonoma 6, Yolo 6, Eldorado 3, Napa 3, San Joaquin 3, Yuba 3, Alameda 2, Los Angeles 2, Nevada 2, Butte, Kern, Mendocino, Riverside, San Benito, Santa Cruz, Stanislaus, Sutter, Tehama, 1 each.

Plums.

Placer 39 per cent, Santa Barbara 18, Solano 16, Sacramento 8, Yolo 4, Los Angeles 3, San Joaquin 2, Tulare 2, Alameda, Eldorado, Fresno, Napa, Nevada, Sonoma, Sutter, Yuba, 1 each.

Prunes.

Santa Clara 47 per cent, Sonoma 13, Tulare 7, Solano 4, Napa 5, Butte 3, Colusa 3, Kings 2, Sutter 2, Yolo 2, Alameda, Contra Costa, Fresno, Glenn, Kern, Lake, Sacramento, San Benito, San Luis Obispo, Shasta, Tehama, 1 each.

Walnuts.

Orange 36 per cent, Los Angeles 30, Ventura 18, Santa Barbara 10, Riverside, San Bernardino, San Joaquin, San Luis Obispo, Santa Clara, Sonoma, 1 each.

BOYS!

Here's a regular, bang-up, man-fashioned overall that takes to rough play like a duck to water. Easy-breezy, loose-cut overalls that stand for rough treatment—and, like Oliver Twist, come back for more.

Tell mother to get you Boss of the Road Overalls—the kind dad wears. Tell her we make 'em of the toughest, fast-color denim; double-stitched, can't-rip seams; hold-fast, patent buttons; roomy, *swinging pockets;* reinforced at all points where lively youngsters' clothes first show trouble.

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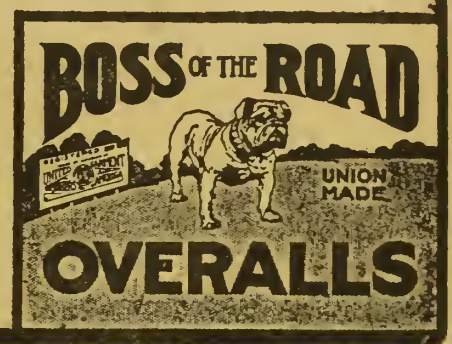
Buy them from your local dealer—he will gladly show you what we mean by swinging pockets.

Look for the Bull Dog on the label. It is your protection. Never has this trade mark meant so much to you as it does today.



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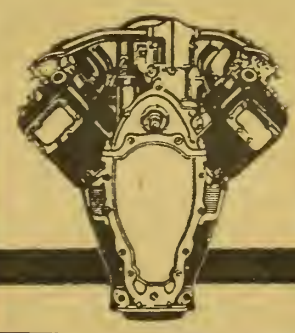

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More carefully handled and prepared than other manures. From highest nitrogenons feed.

	Steer Analysis		Sheep Analysis
Available Nitrogen	1.58 to 1.75 per cent	Available Nitrogen	1.75 to 2.00 per cent
" Phosphoric Acid	.86 to 1.20 per cent	" Phosphoric Acid	1.12 to 1.29 per cent
" Water Soluble Potash	3.48 to 3.92 per cent	" Water Soluble Potash	3.62 to 3.88 per cent
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Highest in organic, and free from foreign matter. Shipped commercial dry basis.—Saves four-fifths labor in application. Write for price and particulars today to insure prompt delivery.

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As surely as Food will win the war, Victory lies in the wake of the Tractor. The importance of the Tractor cannot be overestimated. It is the Farmer's heavy artillery. Learn of the Tractor's immense value at this crucial time.

Make plans NOW to arrange your work so as to attend on these dates—September 17, 18, 19, 20 and 21. You'll be well repaid by the valuable first-hand knowledge gained.

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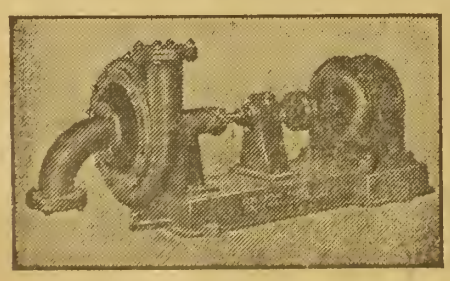

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Injecting Cyanide in Trees

REGARDING "Plugging Trees" touched upon on page 82 of last week's issue, in which we referred to experiments conducted in 1914, account of which was given in the California Cultivator of October 9, 1914, we made comment in effect that the process had never been successful. Our attention is now called to a report made by Prof. H. J. Quayle of the citrus experiment station at Riverside, outline of which is given in the Citrograph of July, 1916. Prof. Quayle and others of the citrus experiment station made a very thorough-going investigation and from the outline of the experiments made we quote:

"A year or so ago considerable interest was manifest in the injection of cyanide into citrus trees for the purpose of killing scales thereon. This idea started or was revived, by an article in 'Science' by Professor Fernando Sanford of Stanford University, in which it was claimed that the cottony cushion scale was successfully killed on broom and also that cyanide injected into a peach and an orange tree resulted in no ill effect on the trees. Several growers of the citrus belt inquired of the experiment station at Riverside regarding this method as a means of killing scales on citrus. Without definite knowledge, it was stated that such a method would appear to be dangerous to the tree and ineffective on the scales, but without actual trial final judgment was not justified. For this reason the entomological department of the experiment station undertook tests along this line. The detailed account of the various experiments will not be discussed here. The method of procedure was to suspend cyanide in solution five or six feet from the ground, the cyanide being conducted through rubber tubing into a hole in the trunk about a foot from the ground. Cyanide crystals were also put in the hole. This was the method followed in the experiments by Professor Sanford. It was found that citrus trees readily absorb considerable quantities of the cyanide solution, one tree taking up about five gallons of solution containing six ounces of sodium cyanide in ten days. A pomelo tree six or seven years old absorbed three gallons of solution containing seven ounces of cyanide in 12 days. With a more concentrated solution, another tree absorbed five gallons containing 25 ounces sodium cyanide.

"The solutions indicated above were more concentrated and were taken up in larger amounts than was probably necessary, but this series of experiments was conducted to determine the possibility of killing the scale, without considering the effect on the tree. In all cases the trees suffered very severely, a part or all of the tree being killed. The scales apparently were not affected until that part of the tree began to die or show the effects of the injection. With less concentrated solution or where a less amount was used, results were not so serious, but in practically all cases, even with the smallest amounts used, there was evidence of injury to the tree. Even though the scales were killed this would not prove a practicable remedy as the solution in many cases is taken up on one side of the tree only, usually the side in which the injection is made. In such cases the remainder of the tree would harbor the scales as if no treatment had been made.

"The trees treated with cyanide solution were cut down and cross sections made of the trunk and branches, and in this way the movement of cyanide in the tree was determined.

"If the cyanide actually penetrates to the very tips of the twigs, which was the case in most of the experiments as shown by the effects on foliage and branches, the question arose as to the possibility of the solution being taken into the fruit. Fruit dropped from several of the trees under experiment after the treatment had proceeded a day or two. One of the fruits was partly eaten, the person sampling it experienced the effects of cyanide poisoning and it was necessary to call a physician. These fruits were later analyzed by Mr. Young, chemist at the Whittier station, who found cyanide, in many cases amounting to as much as 1-10 mg. per fruit.

"Therefore, from these experiments, only a few of which are but briefly mentioned above, the conclusion was reached that cyanide injection in citrus for the purpose of scale control is not only impracticable but is a dangerous procedure, both from the standpoint of injury to the tree and the possibility of poisoning those eating fruit from such treated trees."

Food Administration Rules on Raisin Buying

No licensee is permitted to pay a grower directly or indirectly prices in excess of those recommended by the food administration, which are the maximum prices. Any prices in excess of those published as maximum prices will be considered unreasonable under the Food Control Act.

Raise Some Prices

As packers will not be permitted to take an excess profit on licensed dried fruits which were purchased by them on term contract or other contracts, the price of which is lower than the maximum prices established, the food administration expects packers who have such contracts to raise the price to the maximum price established by the food administration.

Purchases made from growers must be either f. o. b. cars at the railway station, or delivered by the grower at the buyers' warehouse, and buyer shall not haul, nor directly or indirectly pay the cartage nor make allowance for delivery.

That no advance shall be made to the grower prior to the delivery without same being evidenced by a promissory note bearing the prevailing rate of interest.

Sacks shall be furnished according to the custom prevailing in previous years.

Independent packers may purchase dried fruits on term contracts provided definite prices are not named and intent is merely to secure crop, or portion thereof; provided also that such term contract includes the provision that they are subject to the rules and regulations of the food administration.

Rules for Layers

In order to insure a supply of layer raisins a bonus may be paid, provided such premium is paid on the amount of layers actually packed out of the goods purchased.

This premium shall not exceed $5 per ton where the goods are delivered "tray slipped" and $15 a ton for those hand sorted. The circular further stipulates that any packer making a profit exceeding 4 per cent will lose his license. Packers selling at maximum prices will have to justify these prices to the administration.

Test Value of Bordeaux Mixture

AS a result of the present high price of copper sulphate, the principal active ingredient in Bordeaux mixture, many farmers who are compelled to combat such diseases as late-blight of potato, black-rot of grape, and bitter-rot and blotch of apple are asking the United States department of agriculture, "What can we use as a substitute for Bordeaux mixture?" There is no substitute, according to specialists of the department—Bordeaux mixture is the only reliable preventive for such diseases. Methods of calculating the value of commercial Bordeaux mixtures have, therefore, been published in Farmers' Bulletin 994, a copy of which can be obtained from the department at Washington.

Every package of commercial Bordeaux mixture carries a label on which is given its content of copper. This is usually given in percentage, and by multiplying this percentage by 3.93 the result gives the amount of crystallized copper-sulphate, the bulletin explains. If the percentage is given in terms of copper oxid, multiply by 3.14; if in copper hydroxide, multiply by 2.56. In order to calculate the copper sulphate when diluted ready for application, multiply the number of pounds of the concentrated Bordeaux mixture to be added to 50 gallons of water by the percentage of copper sulphate.

Physical properties, such as adhesiveness, texture, spreading quality, and rate of settling, also are important factors in determining the efficiency of Bordeaux mixtures. A preparation containing a large amount of copper, but coarse and granular in texture, with poor spreading and sticking qualities, can not be expected to give good results in cases where a good fungicide is required. To test the physical properties, dilute the mixture and place a small quantity in a glass tube, and watch the speed with which the solids settle to the bottom. If the copper is held in suspension for a great length of time the physical properties of the mixture may be regarded as good.

In order to reduce the cost of spray material some growers are using a weaker mixture than is commonly advised for the various diseases which require Bordeaux treatment. When the disease attacks are mild, a Bordeaux mixture containing considerably less copper sulphate than is commonly advised may give very good control, provided its physical properties are good and it is thoroughly applied, the bulletin states. When infection is severe, weak mixtures should be avoided, for the resultant loss when they are used may much more than offset the amount saved by using the proper strength. Spraying is a question of insurance and the grower must decide whether he wishes to insure his crop wholly or only partially by the use of Bordeaux mixture containing sufficient copper.

Mismarking of Fruit

The following is an excerpt from a letter from A. Wellner, president of the Buyers' Association of New York, to Chas. Virden, general manager of the California Fruit Distributors:

"We take this manner of calling your attention to an abuse which is practiced by many growers of your state. A habit of placing large fruit on the top of carriers and inferior and small fruits on the bottom seems to have been encouraged through the fact that no one takes the trouble to point out who these so called deceivers are. On this day we had in the offering several packs of apricots marked as five by five packages and the bottom row contained fruit about the size of a nine row cherry. This abuse brings us into a great deal of difficulty with the consumer who often returns this fruit and makes it appear as though the deception is on our part and done with intent to defraud. We have had a number of complaints of this nature through the season."

From the above it would seem that there has been some flagrant mismarking of certain fruit and that the inspectors will have to enforce the provisions of the standardization act with a more rigorous hand. There is little excuse for conditions such as are outlined above and if this state is to stand behind its products the producers must be prepared to abide by its regulations.

That this complaint of sharp practice on the part of certain shippers is not merely a trick of the Buyers' Association is evidenced by a letter received by this office from the bureau of chemistry, United States department of agriculture:

"The federal food and drugs act states that food in package form shall be misbranded if the quantity of the contents be not plainly and conspicuously marked on the outside of the package in the terms of weight, measure or numerical count.

"This provision of the law is applicable to products of the farm such as fruit and vegetables if shipped in package form as well as to manufactured foods. Shippers of these products should see that bags, crates, boxes, hampers and packages of other kinds bear a true label before being shipped in interstate commerce or otherwise brought within the jurisdiction of the act.

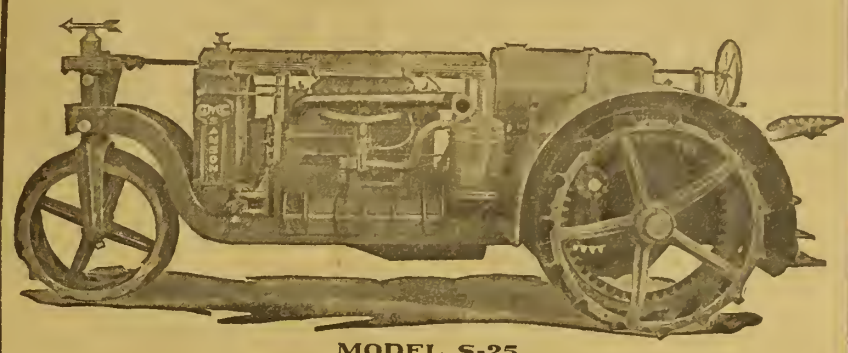
"If during the present season inspectors of the bureau encounter interstate shipments of these products not properly marked with a statement of net contents, official samples will be collected and appropriate action taken under the terms of the food and drugs act." — Report of State Horticultural Commissioner.

GRAPE INSPECTION IN FRESNO COUNTY

County Horticultural Commissioner Roullard of Fresno writes encouragingly regarding the work of standardization and this season's shipping. He says:

"We are in the midst of the grape harvest. I will probably have 11 inspectors in the field during the height of the season. Grapes are a little earlier than usual and are extremely high colored. Slight traces of mildew have been encountered by the inspectors. There is a tendency among the growers to want to ship their grapes too soon, which has caused a number of condemnations on account of too early picking. Mr. Bremner has been put in charge of grape inspection in Fresno and Tulare Counties. This has been a very satisfactory arrangement for both counties and the work is progressing nicely."

Allies in the Fight



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GMC TRACTORS GMC TRACTORS

The "Sammies" at the front and the "Samsons" on the farm have proven their effectiveness. Both have been tried and found not wanting. Both are doing their parts successfully in their respective fields of effort. They are the result of careful selection approved by rigid tests.

In the "Sammie" is crystallized all the dominant features of the ideal soldier. In like measure, we believe that you will find embodied in the GMC Samson Sieve-Grip Tractor all the features of the ideal tractor,—simplicity, strength and endurance, coupled with economy in operation and ability to meet the most exacting demands day after day, fair weather or foul.

The GMC Samson Sieve-Grip Tractor stands on a sure foundation,—a record of nearly two decades of service.

It displaces ten horses on the farm and is adapted to countless uses, stationary and otherwise, for many of which horses are not suitable. All these labors it performs quicker, cheaper and better than any other power.

The strength of its working parts and its dust-proof motor assure long life and low up-keep costs. By reason of its simplicity, no skilled mechanic is required for its successful operation. Its steering device makes operation easy for the driver, without strain on the machine. Its lubricated Roller Pinions deliver maximum power to the drawbar with least friction loss.

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Built for farm use. Equally successful for drainage or irrigation ditches. Fine for terracing and levee work. Cuts the toughest alfalfa or sweet clover roots without plowing. Leaves the ditch with smooth, hard banks. Works in any soil.

IT DOES THE BUSINESS

10 DAYS TRIAL

The name **Martin** on a ditcher is an assurance of satisfactory field work. It is significant that most Martins now go where others Martins blazed the trail. Each machine sells another—and the reason is

All Steel Reversible-Adjustable
No wheels, cogs or levers. Made in 2, 4 and 6 horse sizes. Large size fine for tractor use.

Popularity and True Merit

The Martin always has been and always will be sold **on its merits** and under a guarantee of satisfaction. More **Martins** are now in use than all other farm ditchers combined, and the facts stated in this advertisement tell why.

Get This Free Book

A Three-Cent Stamp Finds Out

Just say "send catalog" and we will mail a list of users near you, together with full particulars and many photographic reproductions.

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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

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The one big risk on the farm is danger from fire. You can cut a big slice off this risk by using California Redwood.

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Resists fire and rot

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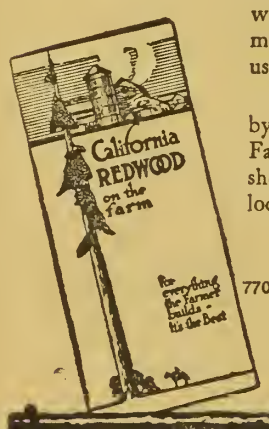

FREE. Write for free copies of "The Test by Fire" and "California Redwood on the Farm"—valuable information every farmer should have. Please give us the name of your local lumber dealers.

CALIFORNIA REDWOOD ASSOCIATION
770 Exposition Building San Francisco, Calif.

Ask for the child's story of the "big trees" of California; there's a copy for every child in the nation.

Test Special Belts

For all kinds of weather and all kinds of wear —for long life and long service

TEST SPECIAL is Guaranteed never to separate in the plies —IF IT DOES, WE WILL GIVE YOU A NEW BELT.

Tell us about your belt troubles—give full particulars as to h. p., electric, steam or gas, diameter; drive, cross, straight, perpendicular, width of belt, ply, distance, r.p.m., and your dealer's name.

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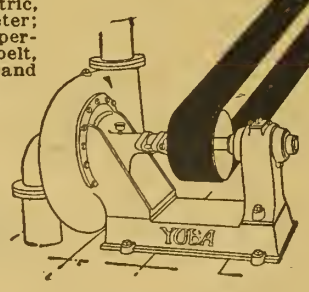

Does your belt separate in the plies?

Cheap quality of rubber cement will always cause the belt to separate in the plies.

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Home Office: New York City. *Branches in all Principal Cities*

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Expert Live Stock Auctioneers

Pure Bred Stock Sales a Specialty

Sales conducted in all parts of California and adjoining States. Twenty-five Years' Experience.

BEN. A. RHOADES, Auctioneer

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The Papec Pneumatic

Ensilage Cutter Beats Them All

If you have the best silo it is the Simplex—an all one piece stave silo. For particulars write

Santa Fe Lumber Co.

16 California St. *San Francisco*

When writing advertisers, mention The Cultivator.

Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Potatoes as Goat Feed

Do you consider boiled potatoes a good substitute for rolled barley in the feed of milch goats, especially in the winter before freshening? My goats will not eat raw potatoes but eat boiled ones with avidity.—Subscriber, San Luis Obispo.

Potatoes may be fed extensively to live stock, especially if cooked. However, Henry's "Feeds and Feeding" says: Heavy allowance of potatoes produces milk and butter of poor flavor. According to Pott, cows of average weight should not be fed more than 33 pounds per head daily of cooked potatoes and somewhat less of the raw tubers." "In Europe heavy yielding varieties of large sized potatoes are extensively grown for stock." "Heavy feeding of raw potatoes is not advisable, as it induces scouring." "If fed in limited amounts slice and mix with dry feed." Do not feed sprouts nor unripe potatoes to stock. In some European countries dried potatoes are fed extensively to live stock.

For a milch goat we have no data, but if 33 pounds is the limit to a milch cow then the quantity to be allowed to a milch goat should not exceed four or five pounds when in milk. Before freshening the feeding could be more liberal. The water in which the potatoes are cooked should not be used. We will be glad to hear from any goat breeder who has experimented in feeding potatoes.

Horseradish Roots

In regard to question and answer about horseradish roots on page 35 of the Cultivator of July 13:

Horseradish roots are only good at one season of the year, and that is just before the plant starts up in the spring. Then the roots are tender and juicy and have the taste that we all like on a piece of good bacon. The roots should be dug then and stored away as you would potatoes. Wash them and trim them and pack in a barrel in the cellar where they will not dry out. It will only keep then for a reasonable length of time. To keep it for later use it should be grated and bottled with vinegar the same as that you can buy in the market. After the plant has put forth its leaves the roots become woody and tasteless but become tender and pungent again after a season of rest in the winter.

Castor Bean Market

Where could I find a market for castor beans?—Subscriber, Azusa.

We are not certain as to where a contract may be secured other than that the war department has made contracts with certain people in this state for growing some 10,000 or more acres of castor beans this year. Whether the contractors are in a position to buy any stock outside that actually contracted for we are not certain. The contract price was, we believe, $3.50 for 46 pound bushel and from this the contractor was allowed to deduct ten per cent. Information may be had by writing Henry S. Gane, Santa Barbara.

Blossom End Rot

Have some fine tomato plants but as fast as they ripen a black rot as large as a half dollar takes possession of the flower end. Am getting about one out of six. As every one else in this section is having the same experience and we are in line to lose the greater part of our crop, can you give us a remedy in the next issue of the paper?—Subscriber, Elsinore.

Blossom end rot is one of the worst pests that bothers the grower of tomatoes. It is a bacterial disease, though various fungi seem to develop once it becomes apparent. "The Culture of Tomatoes in California with Special Reference to Their Diseases," by Prof. Rogers, treats upon it quite fully, and the only control or preventive measure suggested is: "Keep the plants growing steadily. Irrigate at regular intervals, putting on a sufficient amount each time to allow the water to reach the feeding roots. Cultivate thoroughly after each irrigation." This bulletin may be secured by writing University of California Agricultural Experiment Station, Berkeley, and asking for Bulletin 239.

Government Prices

Would like to know as to government prices. Has there been a price set on raisins? We have sun dried Sultanas and Thompson Seedless. We have been told that the government set a price of 6¼ to 6¾, sweat box delivery.—Subscriber, Ontario.

The market page of this week's Cultivator contains the prices which have been made by the Associated Raisin Company. The government has directly named no prices, though the food administration has approved the action of the Associated which practically amounts to naming the maximum price. No minimum price has been named and the securing of the maximum or as high a price as possible is up to the business ability of the grower unless he is a member of the Association.

Sale of Lemons

I sold my crop of lemons on the trees and got $150 in advance. A little later the same man purchased the grove and now he claims that he pays for the fruit twice and wants the money back. As nothing was mentioned in the contract about it I think I have a right to keep the money.—Subscriber, San Gabriel.

This question is not referred to the legal department because, plainly, it is one of fact rather than of legal procedure. As stated, it appears to us that the original owner of the place is entitled to retain the $150 and to collect the balance due when fruit is marketed. The transaction had been entirely completed before purchase of the place, and as purchaser had full knowledge of the former sale of the fruit .he could not set up any claim of innocent purchaser of the ranch with the expectation of securing control of the fruit. On the other hand, if it had been sold to a party not aware of the preceding sale of the fruit, then as purchaser of the place he would be entitled to all fruit remaining.

Year Book

I noted your review of the year book of the department of agriculture and would like to ask where should the request be sent for this district.—Subscriber, Heber.

You may write to Congressman Wm. Kettner who is representative of the 11th district, or you can write to Senators Hiram Johnson or James D. Phelan, Capitol Building, Washington, D. C.

Scum on Honey

After storing honey I note scum forms. What is the cause and how may I prevent it?—Subscriber, Los Angeles.

This question was referred to Prof. Geo. A. Coleman of the state university, who answers:

"On all honey after extracting, if allowed to stand in the vessel, a scum will rise to the top, made up of impurities such as wax, brood, dead bees or particles of dirt which may get into it. This is particularly the case with honeys which are extracted when not thoroughly ripened. In all cases honey should be strained as it leaves the extractor and subsequently skimmed until no further impurities come to the top. It is frequently the practice to draw honey from the bottom of the tank in which the honey is stored through a 'honey gate' so that the impurities do not get into the smaller receptacles in which the honey is to be packed. The thorough ripening of honey cannot be too strongly recommended. Honey attracts moisture and there is always a tendency for a very thin layer to form on the top in which the water content is very high. In such a film the amount of sugar is low, the acetic acid forming bacteria can grow rapidly and the honey becomes sour. In thoroughly ripened honey it is very probable that a film of thinner honey is always present, but in such a case the sugar content is so high that the bacteria cannot grow."

Killing Trees With Chemicals

Will you please give me information concerning the killing of pepper trees. There is one method of boring a hole in the side of the tree and injecting some solution into it but the name of the solution has been forgotten.—Subscriber, Montalvo.

We know of nothing as effective and cheap as girdling with the ax. If one wishes to experiment, however, we may say that cyanide of potassium in solution introduced so as to be absorbed by the cambium or first layer under the bark will ultimately result in the death of the tree. On this point interesting information may be had by reading Prof. H. J. Quayle's article on page 128 of this issue. Any chemical treatment is reasonably sure to cost far more than a bit of muscular work. Even in the matter of taking out stumps and preventing suckers from sprouting up there has never been very satisfactory chemical treatment. A practice which is quite common, however, is to bore holes in the top of the stump, preferably near its outer rim, into which saltpeter is placed. This especially if an attempt is to be made later in burning. After placing the saltpeter a few weeks or a month later the stump is known to be far more combustible. We would prefer this to the application of salt over the top of the stump which some often recommend. The salt is liable to prevent decay and certainly does not increase combustibility.

Sheep Running at the Nose

Some of my sheep have a running at their nostrils. Is this caused from the gad fly? Can you tell me how to cure them?—Subscriber, Ripon.

See article on Control Sheep Pests, page 41 of issue of July 13, 1918; also Dr. Petrie's reply, "Grub in Head," page 87 of issue of July 27, 1918. This is possibly a case of grub, an internal parasite which is practically impossible to handle when well established. For the other sheep, preventive measures should be followed as suggested in the articles referred to.

Cutworms in Alfalfa

Cutworms are seriously interfering with my stand of young alfalfa. How can I control them? — Subscriber, Santa Cruz.

Use a pound of Paris green to 40 pounds of bran; sweeten if possible with cheap molasses and water sufficient to make a stiff mash. This should be distributed about the field in small quantities. Of course, poultry and other stock should be kept out. And it should be distributed in such small quantities that larger stock will not be injured. To prevent further increase in the number of worms, the placing of light traps, with torch over shallow pan of oil, destroys thousands of the moth. This last measure should not be depended upon for control for thousands of the moths will have laid their eggs before they are caught.

GREAT TRACTOR EXHIBIT AT STATE FAIR

The California Tractor and Implement Association will unite in making a great exhibit at the state fair to be held at Sacramento, August 31 to September 8. The exhibit will be what is known as a still exhibit, the same as that of last year. There will be no machinery in motion inside the tents.

There will be members of the association present to explain the "Stanislaus Plan" for financing tractor purchases. There will also be practical demonstrations for encouraging tractor owners in better care and more extensive use of their machines.

MUCH WORSE

"Can you imagine," said a teacher of natural history, "anything worse than a giraffe with a sort throat?"

"Yes, sir," came the answer from one boy.

"What, pray?" asked the teacher in surprise.

"A centipede with corns."

Help Win the War by Making Food With the "New Way" Vegetable Drier

Wonderful home process for making Potato flour. Sure, safe and economical.

Any person can operate it and make big money. We show you how and will sell a few of these machines **at cost** to introduce them in California.

We set the drier up and start it working. Will dry all kinds of fruits and vegetables. Get a "New Way" Drier and become independent. Be sure to write us for our complete circular. Do it today, while you are thinking about it.

"New Way" Vegetable Drier

227 Thirteenth St., between Mission and Howard

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REDWOOD IS DURABLE WOOD

REDWOOD IS FIRE RESISTING

No mere words can tell a truer story of the fire-resisting quality of redwood than this picture of the scene after the fire.

PACIFIC REDWOOD tanks and pipelines are built of seasoned lumber, in the manner thirty years of experience has proved the best.

PACIFIC Redwood tanks and pipelines cost so little to install, and last so long, that there is no farm investment equal in the amount of comfort furnished.

They save labor and drudgery, they preserve life and food, they economize time, they are the final touch to farm improvement.

To make the farm more attractive install a PACIFIC redwood tank and pipeline.

Our engineers will cheerfully draw up a water system, at your request.

PACIFIC TANK & PIPE CO.

THE STANDARD SINCE 88

312 Market Street, San Francisco
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Pacific Tank and Pipe Co.
Address nearest office.

Gentlemen:
Please send promptly your catalogue of Water Tanks.

I need a tank to hold_____ gallons.

It should be mounted on a tower _____feet high.

The water to be delivered from _____

Pipe { Length_____ Size_____

Name_____

Address_____

August Vegetable Planting in Southern California

Written for California Cultivator by D. F. Reichard

AUGUST is the second spring time for Southern California gardens. This is when we get another "swat at the kaiser." True, it takes a little more water to keep the ground in shape, but the weeds do not grow as freely as in the spring and early summer. As soon as the early crops are harvested prepare the soil for second crops. Fertilize, thoroughly irrigate and work the soil. When the ground is in shape plant your seeds or plants at once for every hour's delay means so much moisture lost. In planting seed at this season they should be planted twice as deep as in the spring when the weather is cooler because the surface soil dries out so quickly.

Plant now for fall and winter vegetables. Write to the food administration for information as to how great a help it is to the nation and the Allies and how great a benefit to our own health to use vegetables. Raising the stuff at home saves outside labor and transportation. Using vegetables grown in the neighborhood saves transportation and waste of time and labor in handling the produce through the larger distributing points. Many of our crops do much better when planted during the late summer months than at any other time of the year. Among these are beets, carrots, turnips, parsnips and kohl rabi. The cool months in which they mature give them better flavor and they keep in the ground much longer and better than spring grown stuff. Cabbage and cauliflower are really good when they head during cool weather. By starting the plants this month these will come into maturity about the first of the new year.

The first part of August is the time to plant the fall potato crop. Those put in at this time come off during cool weather and are in fine shape for keeping through the winter and spring until new potatoes are ready. It requires about 50 per cent more potatoes to plant a given piece of land to fall crop than in the spring. That means that to plant an acre to potatoes will require about 1000 pounds of seed.

Among other vegetables that may be planted with safety and profit during August are varieties of bush beans, sweet corn, cucumbers and peas as well as such hardy items as kale, lettuce, onions, parsley, Swiss chard and salsify.

Plant everything in rows to facilitate irrigating and cultivating — the garden looks much better where everything is growing in neat regularly spaced rows.

Beet, carrot, kohl rabi, lettuce, green onion, parsnip, radish, Swiss chard and turnip seed should be planted in rows 18 to 24 inches apart where they are to grow to maturity. Thin out the young plants when a few weeks old so that they can grow to their natural size without crowding. Plant peas, beans, corn and potatoes in hills where they are to grow with rows two and a half to three feet apart. Cucumbers, summer squash and melons where the climate permits should be planted in hills, allowing at least four feet apart each way.

UNITED STATES EMPLOYMENT SERVICE

Nearly all the employment agencies the country over have been turned over to federal management. This has been true of county and municipal employment places, and the federal government is now locating employment offices in many small sections. While the nucleus of a federal employment system was established ten years ago in the former department of commerce and labor and continued in a more developed form when, in 1913, the department of labor was created, the present service really dates from January, 1918.

The previous nine months had taught the necessity of a national mobilization of labor for war production—the centralization in a government agency of all war labor finding and placing. Independent and unregulated labor recruiting by the growing war industries had demoralized the labor market. War plants, sick of the situation, were forced to "steal" or "poach" in an effort to maintain production. Unscrupulous private fee employment agencies grew opulent on turnover.

Offices established by the government on the Pacific Coast have been numerous, in fact a glance at the list for the entire United States shows that California really has the greatest number of federal agencies of any of the states. Here is a list of some of the offices in Districts 12 and 13:

District 12

Arizona

Flagstaff, Courthouse; Phoenix, 14 Wall Street; Tucson, 63 West Congress Street; Yuma, 311 First Street.

California

Alturas, Anderson, Antioch, Bakersfield, Post Office Building; Berkeley, Bieber, Cedarville, Chico, Colusa, Crescent City, El Centro, Eureka, Fresno, Herald Building; Grass Valley, Hanford, Hayward, Hemet, Hollister, Hynes, King City, Los Angeles—Post Office Building, 207 South Broadway (commercial men's and women's division), 260 Franklin Street (men's industrial division); Loyalton, Madera, Marysville, Merced, Modesto, 804 Ninth Street; Napa, Newcastle, Oakland, 410 Tenth Street; Oxnard, Placerville, Porterville, Red Bluff, Redding, Sacramento, 915 Second Street; Salinas, San Bernardino, San Diego, Post Office Building; San Francisco, 2 Appraisers' Building, 115 Chronicle Building (women); San Jose, 176 South Market Street; San Luis Obispo, Santa Ana, Santa Barbara, Santa Maria, Santa Rosa, Sebastopol, Stockton, 200 South San Joaquin Street; Susanville, Tehama, Vacaville, Visalia, Watsonville, Willows, Winters, Yreka.

Idaho

Boise, 303 North Eighth Street; Pocatello, 348 West Clark Street; St. Anthony, Court House; Twin Falls, 6 Bough Building.

Oregon

Eugene, Pendleton, Medford, Portland, 247 Davis Street, City Hall (women); Salem.

Washington

Aberdeen, Bellingham, Postoffice Building; Everett, Seattle, First Avenue and Cherry Street; Spokane, Postoffice Building; Tacoma, 114 Tenth Street; Walla Walla, Postoffice Building; Wenatchee, Yakima, 118 East A Street.

Hawaii

Honolulu.

"but be sure you get Pioneer Roofing"

It's cheaper to keep your buildings, silos and sheds in good repair—than to build new ones. The roof is a very important part of the building. Don't neglect it. Select materials that are known for their reliability.

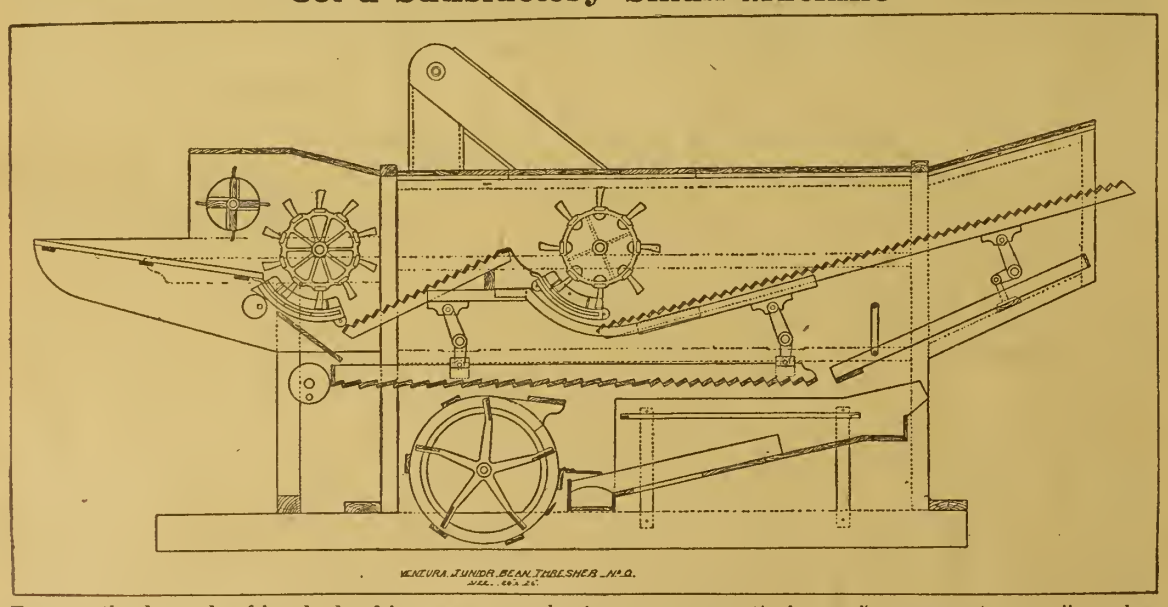
PIONEER Roofing has demonstrated its remarkable wearing qualities time and again—on new work as well as for repairs.

Ask Your Dealer
—for Pioneer Roofing and take no other. If he cannot supply you—write us.

Pioneer Paper Co., Mfrs.
247-251 S. Los Angeles St., Los Angeles, Cal.

Two Men Can Thresh Beans With This

Don't Risk the Loss of a Valuable Bean Crop by Rain When You Can Get a Satisfactory Small Machine



To meet the demands of hundreds of bean growers who have a comparatively small acreage, too small, perhaps, to obtain the services of threshing outfits employing 40 or more men, we offer the Ventura Junior No. O Bean Thresher, a thoroughly practical and satisfactory small machine that can be operated by only two men. It is made on the same principles as our larger machines that have given satisfaction in California for the past 22 years and will thresh every variety of beans. Can be operated by tractor or gas engine and easily loaded and moved from place to place.

It is sold mounted or unmounted and with or without gas engine. This thresher is equipped with cylinder teeth as found by experience to be far superior to machines made elsewhere equipped with round iron pegs for teeth. The cylinder teeth in the Junior O can also be equipped with clips,—special Ventura devices for quick accurate adjustments.

We make six sizes of bean threshers. Write us regarding bean threshing machinery, stating what acreage and power you have and in what capacity machine you would be interested.

Our manufacturing facilities here are such that we offer our customers superior service as compared to service from the east necessitating long freight hauls on heavily loaded roads. If you want a bean thresher it would be prudent to order early and order where you know delivery can be made and where parts can be obtained on short notice.

The Ventura Manufacturing and Implement Co.,
Ventura, Calif.

Since 1902

Pomona DUPLEX-PLUNGER Pumps

One Pump Will Do Your Work

Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

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Pomona "Made Right" Irrigation Gates and Valves

PRICES RIGHT — QUALITY RIGHT
SEND FOR BOOK C.

Pomona Mfg. Co.
POMONA, CAL.

Motor Cycles
FOR SPOT CASH

We positively pay highest cash prices for used motorcycles.

Get your 1918 INDIAN while they last. Easy terms. We also sell Indian bicycles. Drop us a line.

Indian Distributors

Pacific Motor Supply
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Fertilizer

Make your Ranch and Orchard produce the limit while prices are high by the use of High Grade Fertilizer.

Nothing Better Than Fish Tankage

Prices on Request

Rogers Brown & Co.
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Los Angeles, Cal.

CORN HARVESTER Self Gathering for cutting Corn, Cane and Kaffir Corn. Cuts and throws in piles on harvester. Man and horse cuts and shocks equal to a Corn Binder. Sold in every state. Price only $25 with fodder binder. The only self gathering corn harveeter on the market that is giving universal satisfaction.—Dexter L. Woodward, Sandy Creek, N. Y. writes: "3 years ago I purchased your Corn Harvester, Would not take 4 times the price of the machine if I could not get anotber one." Clarence F. Huggins, Speermore, Okla. "Works 5 times better than I expected. Saved $40 in labor this fall." Roy Apple, Farmersville, Ohio: "I have used a corn shocker, corn binder and 2 rowed machines, but your machine beats them all and takes less twine of any machine I have ever used." John F. Haag, Mayfield, Oklahoma. "Your harvester gave good satisfaction while using filling our Silo." K. F. Ruegnitz, Otis, Colo. "Just received a letter from my father saying he received the corn binder and he is cutting corn and cane now. Says it works fine and that I can sell lots of them next year." Write for free catalog showing pictnre of harvester at work and testimonials.
PROCESS MFG. CO., Salina, Kansas.

WE MANUFACTURE
Irrigating Pipe
and Glazed Sewer Pipe
Write or Phone us for Prices
Pacific Tile and Terra Cotta Co.
Tropico Cal. Phone Glendale 158

When Writing Advertisers, Mention the Cultivator.

Tropical Fruits

Written for California Cultivator by Ernest Braunton

THIS is the day of tropical and sub-tropical fruits in California. Never have so many been planted in orchard and garden as during the last two or three years. Every sort of fruit is being given a try-out and every country of similar climate is being searched for fruits for California and Florida.

It must not be expected that all may be grown here, even though frosts may not destroy. Neither will our soils and climate suit all that are sufficiently hardy. Some fruits that will endure much cold will need a more humid atmosphere in which to develop fruit that is palatable. And not all tropical fruits are attractive, even in their native home. I have talked with many travelers in the tropics and have yet to find one who considers the Mammee Apple (Mammea Americana) as attractive to anyone not exceedingly hungry. Last week I talked with a man, not a horticulturist or having any special knowledge of plant life, who has been in the Philippines, China, Japan and four times in Cuba and other West Indian islands. He states that the Mammee tree is fine for shade and general appearance, but the fruit is never eaten raw when anything else is obtainable and is but little better when cooked and sugar and flavoring added. It is plain no Mammee apples should be grown here except as curiosities, though in our warmer sections the tree will doubtless prove attractive as an ornamental.

Indian Lotus

Why do not more grow Indian lotus in their gardens? Nothing could be easier. A constant water supply or a home in thin mud of considerable strength is all that is necessary. In a swamp in Bordentown, New Jersey, the plants have become naturalized, having been planted there more than forty years ago by E. D. Sturtevant, for long years now a resident of Los Angeles. This lot is noted in aquatic literature (in a dry state) as the only place in the United States where the lotus has become naturalized or "run wild." These plants are by many called Egyptian lotus, but they are not native to Egypt, do not grow along the Nile River, and the so-called lotus of the ancient Egyptians was a nymphea or what we call a water lily. Aside from the oriental species but one other is known, and that one is native to the United States. It has the further distinction of being the only yellow one on the globe. It is not known that the two species will hybridize. Roots planted in shallow water at edges of ponds will thrive in any part of California. They are gross feeders, and cultivators use much stable manure in soil prepared for them. Under fairly good treatment they yield an abundant crop of very large flowers of many shades of color, during early summer. One does not need to build an artificial pond for them if he has a marshy depression on his land.

Return of Cacti

It is now a full quarter century since the collapse of the last "kactus kraze," in which the writer had no small part, having had charge of the largest commercial cactus stock ever assembled. At various times a slight renewal of interest has been apparent and is now more apparent than at any time during late years. I fully believe that when the great war is over and the normal in all things is resumed, there will be a revival of interest in cacti, but it will never again become so strong a "fad" as it was twenty-five to thirty years ago. No family of plants has more beautiful flowers; no family has so many curious and interesting forms. All persons show a kindly regard for cacti in general, for none "handle them without gloves," and few but treat them tenderly, if not affectionately.

Climbing Ferns

It is known to many that climbing ferns exist, but to a far lesser number, perhaps, that they are exceedingly easy to grow. They will grow where the climbing asparagus grows and do equally well under similar treatment. Twenty years ago the strings of these ferns could be had at any local florist's shop; now they are not much seen. They are neat and attractive climbers for shady spots and should be more popular. All are species of Lygodium and may be ordered under that name. The more common species is L. Japonicum, though dealers may call it L. scandens, a less-known species. Both are easily grown in any garden.

Monkey-pot or Paradise Nut

Occasionally there is seen on local markets a nut under the name of Paradise nut, commanding a higher price than the Brazil nuts so comon everywhere, and of a more delicate, pleasing flavor. They are species of Lecythis, members of the Myrtle family, trees native to the same parts of South America as are the Bertholletias, or Brazil nuts. It is too cold in California for any of these trees to make a successful permanent growth.

Philippine Nut

This nut is native to Luzon and other islands both within and without the Philippine group and is known to botanists as Canarium Luzonicum. These nuts are not very popular in California and many who buy them once are satisfied for all time. Fresh nuts, from specific trees, are doubtless very good, but there is a great range in flavor and as a whole the crops reaching California are not popular. The trees are from the tropics only and cannot be grown in California.

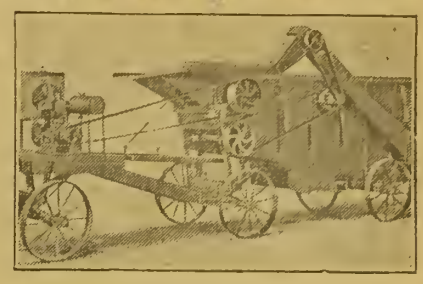
Australian Tree Asters

When Prof. L. H. Bailey returned from New Zealand, a couple of years ago, he wrote me that he marveled we did not grow more oleasters or tree-asters from Australia and New Zealand. As their popular name implies, the flowers much resembel asters but are borne on shrubs and small trees. They are very floriferous, hardy here, and should prove valuable additions to our long list of fine plants from the Antipodes. They have been tried in California and not found wanting. In the northern part of the state they are more planted than in the less humid south.

Evening Primroses

Oenotheras or Evening Primroses are by no means confined to the yellow species that is wild in our lowlands. Other species are of white and several shades of pink, of large size, good color, easy of culture, and altogether much to be commended for general culture in flower gardens. I have grown all these sorts and have seen them in the gardens of others, so have no hesitancy in recommending them to others. In fact, some species are of such easy growth that they are self-sowing and come up each year after once planted in a favorable spot.

Cushman Light Weight Motors



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This is in fine mechanical condition, and on account of its large Phosphoric and Potash content, is a very suitable fertilizer for this season of the year.
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Orange, Lemon, Pomelo and Lime, bud selected (pedigreed) trees, subject to immediate delivery. Correspondence invited and prices cheerfully quoted.

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100,000 feet New and Second-hand Pipe and Casing.
Pipe—½, ¾, 1, 1½, 2, 2½, 3, 3½, 4, 4½, 5, 6, 7, 8, 9, 10, 11, 12, 15 inch.
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All above pips and casing is practically as good as new, with good threads and couplings on each joint. We also carry valves and fittings, pumps, engines, boilers and rail. See our stock and get prices before buying elsewhere.

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THE WORLD'S LARGEST HAY PILE (2700 TONS)
THIS HAY HAS BEEN HANDLED THREE TIMES WITH THE
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FIRST, FROM THE FIELD ON TO THE STACK, THE BALES LIFTED
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If you are paying more than 35 cents per ton for stacking your hay, you are losing money. You can stack it for less than that if you use the

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Senior Herd Sire Juliana De Kol King Segis, Grand Champion Kings County Fair.
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Percheron Breeding in California

By R. P. Royce

CALIFORNIA breeders made a splendid record in 1917 in Percheron breeding according to recent information sent out by the Percheron Society of America. Our Percheron men registered 76 colts during the fiscal year ending October 31, 1917. This makes California stand 20th in the United States in Percheron breeding. The ten leading states in the order of their importance, together with the number of colts recorded from each, follows: Illinois 2386, Iowa 2110, Ohio 864, Kansas 759, Nebraska 523, Minnesota 447, Indiana 440, South Dakota 392, North Dakota 370, and Wisconsin 353.

The horse business is on its way to better times. Percherons have been increasing in popularity rapidly during the past 12 months. The Percheron Society of America reports that "During the fiscal year ending October 31, 1917, 10,508 Percherons were registered in our society—over 1000 more American bred colts than were ever recorded before in one year. Over 11,000 horses were transferred on the records of the society in the time mentioned. In spite of expensive feeds and a scarcity of farm help the Percheron horse has had a greater year's business in 1917 than ever before."

California breeders who recorded colts last year, together with the number of colts they registered: J. A. Franklin, Durham, 2; Friesleben Estate Company, Oroville, 1; J. T. Silva, Pinole, 2; T. G. Atkinson, Metropolitan, 1; Ramina Ranch, Tehachapi, 1; M. Bassett, Hanford, 2; W. D. Trewhitt, Hanford, 2; L. E. De Forest, Susanville, 2; Dodge Brothers, Red Rock, 2; A. O. Dinsmoor, El Monte, 2; Elliott-Brant Rancho, Owensmouth, 3; Ed R. Maier, Los Angeles, 2; A. H. Tilton, Madera, 1; H. H. Van Nader, Ukiah, 1; C. L. Crawford, Ukiah, 2; J. C. Johnson, Ukiah, 1; J. L. Harvey, Adin, 3; T. M. Harvey, Adin, 2; F. L. Hall, Perris, 1; Frances A. Read, Blythe, 1; George J. Read, Blythe, 1; A. J. Stalder, Riverside, 7; Paicines Ranch Company, Paicines, 3; George A. Pope, San Francisco, 1; Ralph L. Clark, Lodi, 2; Mrs. F. S. Israel, Linden, 4; H. G. Learned, Stockton, 1; Edmund Miller, Stockton, 1; I. C. Richey, Ripon, 1; Cora S. Secrest, Stockton, 5; John Secrest, Stockton, 1; Robert Blanch, San Jose, 1; Oliver P. Jenkins, Stanford University, 10; Shavista Ranch, McArthur, 1; Lillie E. Gurnsey, Red Bluff, 2; Walter Reed, Los Molinos, 1.

The demand for draft horses on our farms is increasing. Argument to convince an intelligent farmer of the advantage of using heavy horses is no longer needed. He knows it. Farm sales reflect the situation. Roomy, drafty mares—grades—standing from 16 to 16.2 hands, and weighing 1600 pounds or over, will, if of reasonable age, command $500 to $600 per pair in almost any farm sale, and there are never enough of this sort to satisfy the clamorous demands of hard-headed farmers who want good teams. Small stuff and animals of draft breeding but too young to work may sell at a discount, but draft animals of serviceable ages are keenly sought after by farmers in all sections of this country. For a time last fall they sold below their real value, on account of the attempts of many owners to cut down on feed bills during the winter, in the hope that they might thereby be able to buy at a figure this spring which would make the venture profitable, but prices on good draft mares have advanced fully $50 per head in the last few months, and men who have sold themselves short are destined to pay dearly for their experience when they find it necessary to buy.

Apparently a great many ranchers who use horse power to a greater or less extent figure that they can buy horses and mules cheaper than they can raise them. That such a policy is a grave mistake must be evident to anyone who will stop and consider where such a policy will end.

Suppose for the moment that the majority of ranchers adopt the plan of not breeding their big mares, thinking that when the time comes to buy they will have no trouble buying what they want from their neighbors. Clearly, the farmer cannot buy a horse unless some other farmer bred his mare four or five years before. Normally the bulk of our best draft horses has been produced by a comparatively few breeders, and if these breeders fail to breed their mares it does not require a prophet to see what is bound to happen. A shortage of desirable horses is inevitable, and prices will increase under competition.

That the horse and mule industry is headed in this direction goes without saying—it is a matter of common observation that the number of mares being bred is showing a heavy decrease each year. It is too early to note a keen shortage yet, but it should be borne in mind that a horse shortage does not manifest itself for about four or five years. Those who have given the question thought are certain that a marked shortage will be a fact within five years.

If the facts are as stated, the future course of the keen horseman should be plain—prepare now for the shortage.

City and farm demand will continue to furnish an outlet for serviceable stock of the right stamp, and the war—and before long peace in Europe—will require vast numbers. European demands and domestic demands will be factors that will set new value on horses and mules.

The man who views the future closely and acts with foresight will find that producing horses will be profitable.

MAKING HERDSMEN

The unusual condition caused by the number of young men going to war has placed the responsibility of feeding and herd management in many cases in inexperienced hands, and as a result many capable and expert fitters will be developed. It will require a little time and a little careful study, but the expertness will come.

Nobody has a corner on expertness. There have been many illustrations of the untried farm boy bringing out animals well conditioned and in attractive bloom. There will be many more of these illustrations in the near future. There are many opportunities for the boy who has a little capacity along this line. The improved stock industry is constantly in need of more fitters who are capable. There is an attractive field awaiting.

Field Notes from the Live Stock Men

Maurice Rucker's Trailblazer, sired by the great Pathfinder, is a splendid animal, with about all the strong points of the Duroc-Jersey. He is in the running.

Professor Thompson says that the Hampshire hog is coming into greater notice and favor in the East and will be making a greater showing in this state in the not distant future. It's a good hog at that.

H. L. and E. H. Murphy are filling their big silo with the best possible material, sweet corn. Their fine sleek Shorthorn herd and well fed Berkshires show excellent care and should show up well at the state fair August 31-September 7.

Milking Shorthorns and Berkshires on the farm of Geo. A. Murphy form two of the main sources of income. A visit to see them always gives a breeder pleasure, and George always gives a fellow some valuable hints on good breeding practice too.

Dr. H. W. Hand's "Keep One" herd of Jerseys will soon have nine head on official test in a hot race for Register of Merit honors. He expects a fine record from his junior champion cow, "Brilliant Jersey Queen, which has just freshened.

W. M. Carruthers says he is going to show at the state fair a herd of Shorthorns of the best quality that has ever entered a show ring on the Pacific Coast. He's a man who usually backs up words with deeds so look out for his showing.

H. P. Slocum & Son's showing on the fair circuit this year will be a strong presentation of the merits of the Duroc-Jersey. Many think that contestants will have difficulty in winning much of the "sky blue" from his excellent herd headed by his splendid boar. They are good to look at and the judge is going to notice 'em.

C. A. Briggs writes: "I have a Jersey heifer calf that I think is a likely chance and I plan to enter it just to see what the judge will say about it. She was born June 16. Her sire was Majestic Noble Lord and her dam Beatrice of Venadera, a Register of Merit cow with a record of 532.02 pounds of butter, 7834.1 pounds milk; she carried a calf 201 days during the test.

Lovers of good swine will all regret the news of the death of Fred Johnson's great Duroc-Jersey boar, Johnson's Defender that won junior and reserve championships at the last state fair. A sketch of him appeared in the Cultivator a short time ago in our Breed Leaders department. The picture published in that article gives a good idea of this great sire who would have added to his laurels had he lived.

A. J. Morey and his partner-wife, Nellie A. Morey, have 16 head of registered young Jerseys. Their Gertie's Fox Alene came fresh September 20, 1917. She won for her owners $46 and grand championship at the Orland fair last year, and also a prize of $40 for highest product. Her bull calf sold for $100. Up to June 1918 she has produced 400 pounds of butter fat at an average price of 45 cents with her skim milk valued at $15, a total income for nine months of $281.

Everybody is feeling good all over to have Professor J. H. Thompson back in his place at the University Farm, Davis. In a long talk with him the other day he said that he was receiving many inquiries for pure bred swine of all breeds from all over the state. The demand is strong for bred sows, which promises well for the state's output of pork for 1919. This is a splendid indication of a determination of the Golden State farmers to produce the food that will surely win the war. The largest food reserve will surely do it.

ARO HOLSTEIN SALE

On Tuesday, August 20, at the Aro Holstein Farm Dispersion Sale, will be sold one of the greatest young sires ever offered on the Pacific Coast, together with seven of his young daughters. Colantha Aaggie Sir Johanna as an individual would be hard to fault. He is royally bred, being a double grandson of the famous "Century" sire, Colantha Johanna Lad, whose daughters have made remarkable official and semi-official records, he being one of the three only sires each having at least 19 30 pound daughters, and three of his semi-officially tested daughters held world's records in that division at one time.

The sire is a bull of unusual merit, as is shown by the splendid records made by his daughters. He is by Colantha Johanna Lad, a son of the great show bull, Sarcastic Lad, and the first 35 pound cow, Colantha 4th's Johanna, the first cow to hold world's records in every division from one day to a year. The sire's dam is the first 34 pound cow, Aaggie Cornucopia Pauline, who heads the only combination of four direct generations of 30 pound cows and heads two of the 16 combinations of three direct generations of 30 pound cows.

The dam is a cow of great producing ability, having produced nearly 29 pounds of butter in seven days. She is by Colantha Johanna Lad from the 31 pound cow Maid Mutual De Kol, dam of the great young sire, King Pontiac Champion, sire of eight 30 pound cows.

The Aro herd located at Cypress in Orange County is entirely out of the pure bred district, and keen buyers should make arrangements to be there as there will undoubtedly be some great bargains in the sale.

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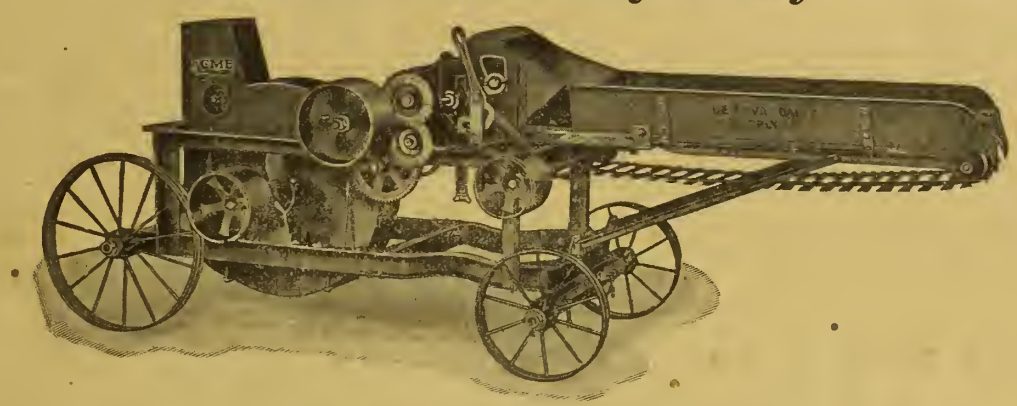

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THE spiral cutting knives are set at the correct angle and make a clean shearing stroke which cuts the silage—does not bruise or shred it. The silage produced is of uniform lengths—packs tight and avoids spoilage.

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Special hay feeding attachment gives all Acme Cutters enormous capacity. What are your requirements?

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LEAK PROOF **PERMANENT**

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Tuberculin Tested

At the ARO Holstein farm, four miles southeast of Artesia and one-half mile south of

Cypress, Orange County

Tuesday, August 20th at 10 a.m.

While the herd is not large in numbers, it is one of superior excellence and combines the three great essentials

Type - Breeding - Conformation

There are daughters of such noted sires as

Colantha Sir Aaggie
Fairview Korndyke Lad
Arcady Pontiac Wayne Hengerveld
King Pontiac Netherland Segis
Juliana King of Rock
Mutual Piebe De Kol
King Segis De Kol Mead

from well bred dams, many with A. R. O. records, as high as 29.36 pounds of butter in seven days and by such well known sires as

Duchland Sir Pontiac Rag Apple
Colantha Sir Aaggie
Sir Skylark Ormsby Hengerveld
Fairview Korndyke Lad
Arcady Pontiac Wayne Hengerveld

together with seven young daughters and four sons of the great young sire at the head of this herd, COLANTHA AAGGIE SIR JOHANNA, 162569, a double grandson of COLANTHA JOHANNA LAD. The three nearest dams average butter seven days, 31.43 pounds and milk 647.70. This great sire will be sold and offers a wonderful opportunity to secure one of the greatest sires on the Coast.

Owing to the lack of time no catalog will be issued but tabulated pedigrees of every animal will be on hand day of sale.

Arrangements for credit can be made prior to sale.

For full information write

Col. Ben. A. Rhoades Harold B. Rhoades
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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

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600 Cows and 50 Bulls Best of Breeding Show Winners
4000 Head Both Sexes Same Breeding as Registered Herd

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Scharbaur & Eldson, Midland, Texas **Elevation 3000 Feet**

What Breed of Sheep?

Written for California Cultivator By W. S. Guilford

THERE were never before so many operators of small farms going into the sheep business as this summer and fall.

The high price of wool—and of mutton as well—is the big incentive, but more and more are they finding that nothing else on the farm pays such a big dividend on the investment.

"What breed of sheep shall I buy?" is a question often heard. And the answer is the same as must be given to any question about breeds. There is no one best breed; all are good, some for one thing, some for another. And any of the breeds of sheep will do well on the small farms of the Sacramento Valley. There are Cotswolds here—and Rambouillets, and Shropshires and Hampshires — some Dorsets and some Corriedales. And there are many crosses and mixtures of these various breeds.

Rambouillets

Just now, with the high price of wool, Rambouillets are very popular. They shear a very heavy fleece, and as bred in California are good mutton sheep.

The Rambouillet is a big, smooth Merino that was developed from the Spanish Merino at the Royal farm at Rambouillet near Paris. Rambouillet rams generally have spirally curved horns; the ewes are hornless. It is reported that these sheep were first brought to America in 1840 and were called French Merinos. About 1860 they were brought to California and some of the best in the world are bred here now.

Rambouillets are very popular for crossing because of the increased weight of fleece in the offspring.

Cotswolds

The Cotswold is a big sheep, and has a heavy fleece of long open wool. It is an old English breed and belongs to the large long wool type. Other breeds of this type are Leicester and Lincoln. Cotswolds have been used on range flocks to increase their size.

Hampshires

The Hampshire is a medium wool mutton breed and produces a good carcass. This breed has been very popular on the range and small farms because of the size and rapid growth made by the lambs.

Hampshires have black faces, are larger than Shropshires. The wool does not cover the body quite so completely.

Dorsets

The Dorset is a horned sheep, an old English breed, medium in size, with white face and legs, both bare.

The breed is highly prized in England and the Eastern states for the production of "hothouse" or early lambs. The ewes milk heavily and breed twice a year.

Shropshires

A great many Shropshire rams have been used in Sacramento Valley flocks for many years. Most of the "black face" rams have been of Shropshire breeding.

This is a mutton sheep having medium wool which pretty well covers the face and legs. They produce a good mutton carcass and a fair fleece of wool. The breed was developed in the County of Shropshire in England and was imported to America in 1855.

Shropshires, Merinos and Rambouillets are the sheep most commonly found in California, there being more of Merino parentage than of any other.

THE HORSE AND THE MOTOR

By W. S. Guilford

I had a long visit a short time ago with a man who is now, and has been for many years past, one of the large dealers in mules and horses in California. He knows horses and mules as few men do and he likes them. He believes that good horses and mules are dependable "instruments" for doing any kind of work, yet he finds them being gradually replaced by motor power at many kinds of work and realizes that this is because it is possible to do this work more efficiently with the motors.

"I have been furnishing for a number of years a certain type of heavy drafter to one big company that has a lot of heavy hauling," said my friend. "These people like horses and like capable ones that are showy as well as big and strong. They sent home the last team they had hired from us a few days ago. All of their wagons have been replaced with motor trucks.

"We have a lot of horses and mules at work on ditch building jobs, road work and other construction work," he continued, "and this will continue for a long time. There are certain kinds of scraper work that stock can do better than machines, and stock for some kinds of farm work seems indispensable."

I know an old Irishman who has been driving mules on various ranches in the Sacramento Valley for over 30 years. He is a good mule man, understand them and likes them.

He was talking about the bean growing in the basin lands in the lower valley. The proposition there is to get the crop in quickly after the floods recede; large acreages must be plowed and harrowed and disked and harrowed and re-disked, a fine seed bed made, and in a short time.

"I don't believe these big high powered tractor outfits do as good a job as I can do with mules," said the old man, "but if they didn't do the work with engines it would never be done. With them they can work almost all of the 24 hours, and it's so hot that it is hard to get much of a day's work out of the stock in ten hours."

All of which is interesting as being the viewpoints of two horse and mule men.

MILCH GOAT RAISING

A new correspondence course on milch goat raising is now being offered by the University of California, Berkeley, through the division of agricultural education. The various breeds of milch goats are discussed, together with their feeding, care and management. Special consideration is given to the phases of the industry which would be of interest to those wishing to keep only a few goats. This course will fill a long felt want in many sections of the state.

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Mammoth Jacks

We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

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Choice breeding animals for sale in season.

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From our stud of registered Percherons we offer young stallions with quality and substance. Also at times we offer fillies, colts, and mares.

Write us your wants, or visit the farm.

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H. C. MERRITT, Jr., Manager

Tulare, Cal.

Shorthorns

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Show Herd won highest honors in 1917.

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T. T. Miller

So. Normandie St., Los Angeles, Cal.

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Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Unsigned communications receive no attention.

Nasal Gleet

I have a mare 14 years old, in good condition. She has a good appetite but coughs some. After driving or working and being unreined and letting her head down there is a copious discharge from the nose. She has been in this condition to some extent since spring. At times she appears to be getting better but is worse again now. Can you tell the cause and what shall I do for her? — Subscriber, San Fernando.

A chronic discharge from the nose such as you describe may be caused by a cold that has affected the membranes lining the nostrils or may be due to a decayed or broken tooth in the upper jaw. If it is only caused by a cold you can dry it up by giving these powders in the feed. Powdered gentian four ounces, powdered nux vomica two ounces, powdered sulphate of iron two ounces and farina or fenugreek six ounces. Mix and divide into 16 powders. Give one powder in damp feed once a day or if the horse is particular about the taste in the feed and will not eat it then put a powder in a long necked bottle, add a pint of water, shake it well and give as a drench. If you notice that the discharge comes mostly from one side then it may be due to a faulty tooth on that side probably indicated by swelling. If you fail in your efforts then you better call a veterinarian and have him examine the teeth.

Distemper

We have a horse that was running in the field. One day he came up with a swelled head which lasted for a few days and then broke, discharging a yellowish matter. The skin has decayed around the openings and has left raw running sores. The worst one is in the glands of the neck. Please advise through the Cultivator.—Subscriber, Linne.

The common name for the trouble is distemper but in the books you will find it described under the heading "Strangles." It is due to a microbe and is contagious. It is considered a colt disease but occasionally older horses have it. Dress the affected parts with a solution of permanganate of potash and carbolic acid. Use half a dram of each, the permanganate and carbolic acid, to one quart of water. Inject it into the openings with a syringe and after washing the outside with warm water and soap dress it also with the solution.

Sow Eating Chickens

We have a splendid young brood sow with her first litter of pigs about six weeks old. In some way she has got started to eating chickens. We are feeding her milk, raisins, middlings, crushed barley and slop. Is there any way of breaking her of the habit without penning her up?—Subscriber, Del Rey.

It surely is not due to a lack of variety of feed in your case. It can not be accounted for and no remedy has been found. Once they have the habit they will eat one whenever they can catch one. Occasionally a sow will eat her own pigs, sometimes not beginning until the pigs are two or three weeks old then will eat one every few days. They may eat two or three and raise the rest or they may continue until all are gone. The only advice we can give is to either make pork of the sow or keep the chickens out of her reach.

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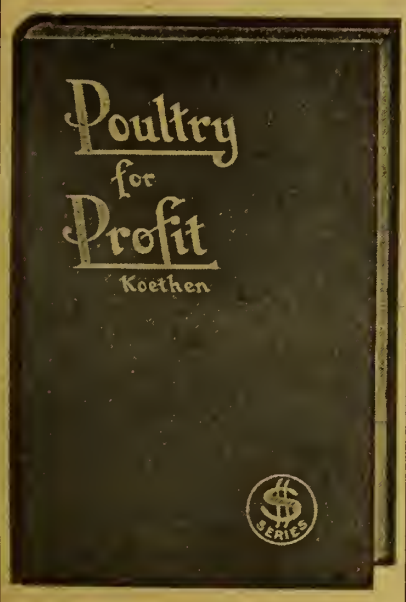

THERE are two methods of gaining knowledge, necessary to make poultry a success; experience—which is a long, drawn out, expensive road and the one too commonly used. Another method is by the careful studying of books written by practical poultry people who have made mistakes and successes and are willing to give this information in order that you may take the short road to poultry success.

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BY

Jean A. Koethen

Graduate of University of Calif.

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The Wasted Egg

Written for California Cultivator By Jean A Koethen

ACCORDING to recently published statements we are still letting 100,000 tons of eggs, worth about $60,000,000, go to waste between the hen and the consumer. This waste of 2,000,000,000 eggs, so badly needed for food, is the result of carelessness all along the line, carelessness in producing and gathering the eggs, carelessness in packing and marketing them, inexcusable carelessness oftentimes on the part of transportation companies in handling them.

What are we going to do about it, we who keep a few hens? The commercial poultryman is doing his part, doing it so well that during the past winter several carloads of choice California eggs were sold in New York for about the same price as that paid for near at hand fresh gathered eggs. The farmer is the chief offender, and since 80 per cent of our total egg supply is produced on farms, his carelessness results in monumental loss. Some of the responsibility rests, no doubt, on the backlotter, for, while his production is far smaller he is just as careless with the eggs he does handle.

The greater egg loss comes in hot weather, and the chief enemy of the egg in hot weather is the rooster. Eliminate the rooster from the laying pen in hot weather and you eliminate all the blood rings and heat-affected eggs. If a fertile egg is allowed to remain for any length of time in a temperature of 70 degrees the embryo begins to develop, and from that time on the egg is unfit for food. It makes little difference whether the embryo dies, forming a blood ring, or goes on developing. It is a dead loss in any case.

Infertile eggs are not proof against careless handling. If the mucilaginous coating is removed by washing, water may enter the shell, carrying with it germs from the outside of the egg, or too great evaporation may follow the removal of the coating, leaving a dried and stale egg. Again, an egg left in a dirty nest, or in a closed cupboard containing onions or other strongly odorous food soon absorbs some of the objectionable odor. All eggs should be collected twice a day and kept in a cool, clean, dry place until they are marketed, and they should be marketed twice a week. An infertile egg remains technically "fresh" for a couple of weeks, but it loses its delicate fresh-laid flavor in a few days.

An infertile egg may become contaminated by having its coating removed, and it may become stale from too long keeping. It may also be cracked, either from being laid in a nest which contains insufficient litter or from careless handling or poor packing. The best protection against cracking is a good strong shell, for an egg with a thin shell often cracks with the gentlest handling. Sometimes these cracks are so tiny as to be invisible, but the egg is spoiled just the same.

Not infrequently it happens that the egg leaves the farmer's hands in perfect condition but is cracked in the hands of the truckman or the express company, or the case is left standing in the broiling sun on the station platform. For this sort of carelessness the farmer has no remedy, except in so far as he can control the truckman, and such control is gained only by organization. An efficient organization can see that its eggs are properly packed and properly handled. It was probably such an organization at Petaluma that made it possible to send eggs from San Francisco to New York. Eggs destined for shipping must have strong shells and strong containers, must be infertile in the beginning and handled with care all the way.

The loss of an egg now and then may seem trifling to the producer who handles thousands of eggs, but it means the waste of the feed which went into the egg and of the labor which produced and candles and markets it. We are told that at present it costs around 40 cents to produce a dozen eggs. Every egg produced only to be destroyed means therefore a dead loss of from three to four cents. Worse than that, it means loss of life, for one egg would be a fair meal for a Belgian baby. Such waste must be stopped, and it can only be stopped as every producer sees to it that his eggs, be they many or few, are not wasted.

THE EGG BREAKING PLANT

To assist egg breakers in selecting effective apparatus and in arranging their plants in a sanitary and economical manner, the United States department of agriculture has issued Bulletin 663, "The Installation and Equipment of an Egg-Breaking Plant."

Egg-breaking plants are located in producing sections and near many of the large markets. They buy the "seconds," which are not marketable in the shell for ordinary food use, but which when properly handled are perfectly wholesome, remove the shells and freeze, can or dry the contents. The frozen, dried, or canned product is sold largely to bakers for use in pastry.

Room for Washing Utensils

"An egg-breaking plant," says the bulletin, "should have an insulated, refrigerated chill room, candling room, freezer, and breaking room. Adjoining the breaking room should be a room for the washing and sterilizing of utensils.

"The breaking and sterilizing rooms should have a plentiful supply of natural light. The walls and ceilings should be plastered and white enameled, and the floors should be concrete with trapped drains. In the partition between the two rooms a sliding window for the transfer of equipment should be built.

"The freezer should be equipped with shelves of brine piping, through which brine is circulated for freezing the cans of liquid egg.

"The candled eggs should be taken to the breaking room in metal pails, because cases with the accompanying packing material are dirty. Leaking eggs after candling should be placed on special trays for transferring to the breaking room.

The Egg-Breaking Outfit

"The egg-breaking oufit consists of a tray, on which is placed an open rack for supporting the cups, and a detachable knife on which the eggs are broken. This knife rests in slots in standards fastened to the ends of the breaking tray. Glass cups should be used for the grading of the opened eggs, because certain types of bad eggs can not be detected in nontransparent containers. When whites and yolks are separated it should be done by means of a sanitary mechanical device.

"The egg-breaking tables should be covered with a nonabsorbing material such as metal or porcelain.

"A churn for mixing the egg before freezing should be provided. It should be constructed so that it can be readily washed and sterilized.

"A lavatory with knee or pedal-valve attachment should be installed in the breaking room near the transfer window for the washing of hands after breaking bad eggs.

"White uniforms should be provided for operators in the breaking room.

"The sterilizing room should be furnished with sinks and steam sterilizers. The sinks should be equipped with drains and mechanical rinsers and should be supplied with hot and cold water and connected to trapped drains."

HATCHERY TO PALO ALTO

J. H. Stubbe, who formerly conducted the hatchery at Campbell, has moved the plant to Palo Alto. It will hereafter be known as the Stubbe Plant and Hatchery.

SAFETY FIRST

"Why," asks a Missouri paper, "does Missouri stand at the head in raising mules?"

"Because," says another paper, "that is the only safe place to stand."

Eggs all through the MOULT!
SHORTEN the moult and lengthen the laying. Globe A-1 Mash (dry buttermilk added) will do it. The live lactic acid bacilli in the dry buttermilk will keep your flock in glowing health: (bulletin 162 U. S. Agr. Exp. Sta., Berkeley).
For Hogs A-1 Hog Feed 10% dry buttermilk) will save from $6 to $12 on fattening each hog.
Fact Book for poultry and hog raisers sent free.
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A-1
POULTRY FEED
Buttermilk GLOBE A-1 Dry Mash

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There is a big distinction between the words "cheap" and "inexpensive." Some folks like to get things "cheap"—only to find that in the end they proved to be the most expensive—because they had to buy another that would give service.

Now we do not sell "cheap" pianos, but we do carry a number of "inexpensive" instruments. The prices are within the reach of most every home. These Pianos will render many years of satisfactory service—they are good, substantial values and are worth every dollar asked. We gladly arrange convenient terms of payment.

We invite you to call at any of our stores—or write us asking for illustrated catalogues and prices.

We are dealers in Steinway and other Pianos, Pianola Pianos, Aeolian Player Pianos, Player Music, etc.

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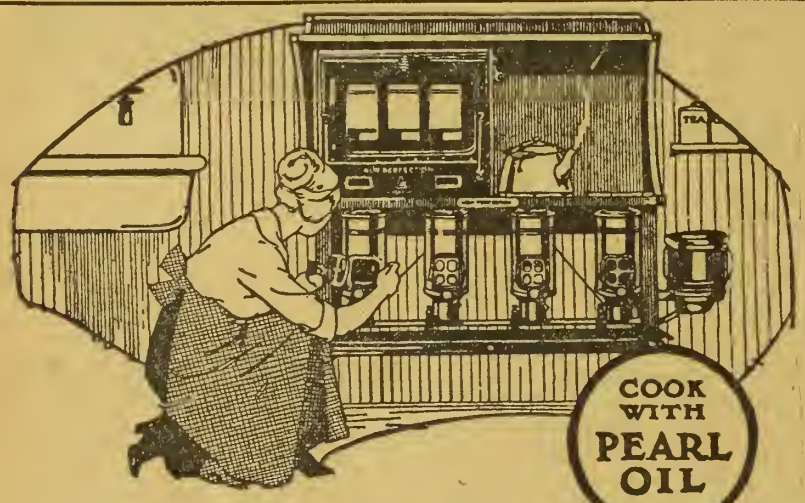

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In 1, 2, 3 and 4 burner sizes, with or without ovens or cabinets. Ask your dealer today.

STANDARD OIL COMPANY
(California)

NEW PERFECTION OIL COOK STOVE

THE GARDEN BEAUTIFUL
IN CALIFORNIA

by Ernest Braunton

Is a thorough treatise on soil preparation and cultivation and general care of flowers, plants, ornamental trees and shrubbery. Its 14 chapters with half tone and line illustrations and binding in silk make it a work that every home should possess.

$1.00 Postpaid
$1.75 with Cal. Cultivator one year.

Cultivator Pub. Co., 115 No. Broadway Los Angeles, Cal.

Household Department

The American Flag

By Joseph Redman Drake

When Freedom from her mountain height
Unfurled her standard to the air,
She tore the azure robe of night,
And set the stars of glory there.
She mingled with the gorgeous dyes,
The milky baldric of the skies,
And striped its pure celestial white
With streakings of the morning light;
Then from his mansion in the sun,
She called her eagle bearer down,
And gave into his mighty hand
The symbol of her chosen land.

Flag of the seas! on ocean wave
Thy stars shall glitter o'er the brave;
When death, careering on the gale,
Sweeps darkly round the bellied sail,
And frightened waves rush wildly back
Before the broadside's reeling rack,
Each dying wanderer at the sea
Shall look at once to heaven and thee,
And smile to see thy splendors fly
In triumph o'er his closing eye.

Flag of the free heart's hope and home!
By angel hands to valor given;
Thy stars have lit the welkin dome,
And all thy hues were born in heaven.
Forever float that standard sheet!
Where breathes the foe but falls before us,
With freedom's soil beneath our feet,
And freedom's banner streaming o'er us?

JERRY OF THE DUMP

By Edward Ferguson, in Dumb Animals

EVERY well regulated suburban town boasts a public dump, which is usually a large low-lying lot where all refuse, tin cans, worthless junk and other varieties of goat food are disposed of. The town of X—— supported such a dump, and the dump supported Jerry. Jerry was a nondescript, wire-haired mongrel who belonged to no one or nowhere in particular. He had just drifted in, and because the public dump afforded a good hunting ground for cast-out bones and other tid-bits that made it possible for him to eke out a precarious living, he had adopted it as his home.

The rubbish wagon drivers all knew Jerry, who was always on the job, waiting expectantly for each new load to be dumped, whereupon with paws and snout busy, he rummaged through the mess for whatever fortune had seen fit to favor him with.

Likewise he was well and favorably known to a crowd of young ragamuffins, who frequented the dump and rummaged, as Jerry did, for what ever they could find.

Some blocks away, in the town's best residential section, lived little Mary Clark. Mary was three, and the only daughter of the town's bank president. She was a carefully nurtured, carefully watched, carefully dressed child, carefully tended by a carefully selected nursemaid. But withal she was a child.

In consequence of which, one day the hue and cry went forth, Mary was lost. She had slipped out unobserved and disappeared. A frantic mother and the equally frantic nursemaid, all the neighbors, the father, and most of the men of the town searched high and low, near and far; no nook or corner, barn or field, was overlooked, but Mary could not be found.

Into the night, with lanterns, torches and flashlights, with shouts and wails, the search went on.

Morning dawned to find the town intent on nothing but the lost child—wild rumors were afloat—rumors of gypsies and kidnapping. The three-man police department was frantically telephoning all neighboring towns and demanding a general round-up of all tramps and suspicious characters.

Down at the dump things went on as usual. Two loads had been delivered and disposed of when Mike Casey, one of the drivers, noticed that Jerry was not in evidence.

"Where's the dog?" he asked his helper.

"Sure and I ain't seen him," was the reply.

A little later the aforesaid ragamuffins appeared and proceeded with their daily search. Near a pile of refuse one of them came upon the dog. He was lying flat, nose on paws, gazing straight ahead. The boy called and approached him; and Jerry did a thing he was never known to do before or since.

He straightened up, every hair on end, eyes ablaze, fangs bared, and snarled his defiance. The boy, frightened at his erstwhile friend's attitude, ran back to his companions. He told his story and Casey overheard it.

"Let's go look," the big Irishman suggested.

Jerry knew Mike and suffered him to approach.

"What's wrong wid yez," he asked the dog, and Jerry wagged his stump of a tail and pawed at what appeared to be a loose pile of old newspapers. The edge of a child's dress became visible. Mike stooped to assist the now frantically pawing dog, and uncovered—Mary—sound asleep.

Apparently the child had wandered to the dump, become tired, and had gone to sleep. Jerry, as her self-appointed guardian, had nosed the old newspapers over her and mounted guard.

He is still "Jerry of the Dump." All the banker's persuasion could not coax him to take up his quarters in Mary's palatial home. But each day at noon he can be seen sitting on a pile of rubbish, eagerly watching the corner, head to one side, one ear cocked, and each day at noon a little girl, with a basket on her arm, attended by a spick and span nursemaid, turns the corner. And each day at noon, when Jerry sees them coming, he barks his delight and wiggles himself into a frenzy of joy.

ICE CREAM A NOURISHING AND ECONOMICAL FOOD

Light, but rich, healthful foods are needed for variety in the diet. Good ice cream is to the boy or grown-up not only a delicacy, but a food that carries rich nutrients needed by the body. It is free from the injurious effects of soggy pastries, and more invigorating than the best of tonics.

One quart of ice cream (of required fat standard) on an energy basis, equals 8.75 pounds strawberries, 5.11 pounds bananas, 6.96 pounds apples, 1½ pounds round steak, 1½ dozen eggs.

Ice cream is commonly thought of and used as a dessert by most people. As a dessert, it is delicious and palatable. As a food, it is nourishing and economical.

It is more a necessary part of every meal than a dessert. "There are unmatchable food values in this combination of cream and sugar."—Roud McCann, Colorado Agricultural College.

COMPARATIVE SUGAR PRICES

During the first year of the war, the United States consumed more than 4,000,000 tons of sugar. The wholesale price of refined sugar in this country at the present time is $7.30 per hundred pounds, as compared with $9.15 last August. The regulated wholesale price of sugar in various foreign countries makes an interesting comparison: United Kingdom, $12.59 per hundred pounds; France, $12.28; Italy, $26.30; Canada, $8.07;; United States, $7.30. An increase of one cent per pound in the price of sugar in the United States would take at least $82,185.820 out of the pockets of American consumers in one year.

The Cultivator Patterns

8642—Girls' Bolero Dress. Cut in sizes 6, 8, 10, 12 and 14 years. The smart bolero is very simple, and it is short enough to show the bright silk underneath.

8925—Ladies' Shirtwaist. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. The front closing of the waist is double-breasted.

8913—Ladies' and Misses' Blouse. Cut in sizes 16, 18 years and 36, 38, 40, 42 and 44 inches bust measure. The front edges of the blouse are turned back to form reveres at the neck.

8893—Ladies' Negligee. Cut in sizes 36, 40 and 44 inches bust measure. The negligee has a three-gored skirt section which is shaped to fit without gathers.

8909—Ladies' Maternity Dress. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. The fichu collar is draped to the waistline.

8924—Girls' Dress. Cut in sizes 6, 8, 10, 12 and 14 years. The one-piece skirt section is gathered all around to the waist and is joined to the panel at the front.

8889—Ladies' Three-Gored Skirt. Cut in sizes 24, 26, 28, 30, 32, 34 and 36 inches waist measure. The skirt may be worn with or without the narrow belt.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all paterns. Address

PATTERN DEPARTMENT
CALIFORNIA CULTIVATOR
Los Angeles.

U. S. Food Administration.

Br'er Tater ain't skeerin' up a ghos' wen he say we alls mus' eat less wheat en less meat en save all de fat en sugar we kin. We has jist got ter feed dat big army er fightin' sojer boys, en we kin do hit by eatin' right smart mo' taters en garden sass en eatin' mo' fish en game 'stid er pork and beef. Ef we alls don't gin ter feed dem sojers right now we'll be feedin' somebody 'fo' long en it won't be us.

ENJOY FRUITS IN SEASON—SAUCE FOR YOUR MEAT

IN THE midst of the steaming and aching of canning and drying let's pause a while to pile high the old-fashioned fruit stand with rosy peaches, purple plums and pendant grapes. Place it on the hall table or sideboard where family and friends may feast on its loveliness of color and form and the rich perfume of these summer fruits.

And, busy housekeepers, while storing for winter enjoy the fruits in season—serve them fresh or serve them cooked, serve them hot or serve them cold—let fruit be part of every meal as a dessert or as a salad, and above all as a sauce for meat.

"Certainly," said Squire Hardcastle, "there is no better relish for game, mutton, lamb, fowls of every sort, even roast pork, than pruin sauce." To the Squire's blue plums let's add apples and peaches, served piping hot as an accompaniment for meat; and soft, ripe peaches, fresh and unsweetened make an excellent summer partner for bacon and salt fish.

If you are not accustomed to fruit served hot, try it. The taste for it is worth acquiring. Don't destroy the natural flavor by sugar and spice or over cooking. Treat fruit with the same respect you would a potato—that is, cook it just tender through and serve it hot. Cooked in this way the real fruit juices and flavors are retained. Some fruits need no sugar at all and others merely a suggestion. Educate the family to demand fruit acids as an accompaniment of meat to replace part of the starch usually consumed. Fruit is food; teach the family to enjoy it by serving it well, and better health will repay your good cooking.

With Bacon

With crisp bacon serve apples, piping hot and bursting with juice, baked without sugar. Or cut the apples from the core without peeling, place in a deep pan with a very light sprinkling of sugar and half a cup water. Cover and steam until tender; remove cover, sprinkle top with brown sugar or brush with syrup and brown in hot oven. Serve from dish sizzling hot.

With Roast or Steak

Ripe peaches or pears steamed until just tender through make an appetizing sauce for meats. Peel but do not cut. Cook in a saucepan, tightly covered, with just enough water to prevent burning. Allow one tablespoon of sugar to a dozen peaches or pears. Steam until tender and serve hot. Be careful not to overcook.

With Chicken

Blue plums are especially good with chicken. Add a very little sugar and little or no water. Heat slowly to prevent burning and cook until plums are broken. Serve hot. Peaches or apples quartered and cooked clear in a syrup of water, sugar and a bit of lemon make a delicious accompaniment for chicken. Serve rice with this combination.

ENTIRELY WHEATLESS BREAD

This recipe is being sent out by the United States office of home economics:

All of These:

One and three-fourths cups liquid, one tablespoon corn syrup, one-fourth cake yeast, two teaspoons salt, one whole egg.

With One of These:

Three and three-eighths cups barley, or two and three-fourths cups ground rolled oats.

And One of These:

Two and one-half cups corn flour, two and one-eighth cups rice flour, two and three-fourths cups sweet potato flour, two and one-eighth cups (scant) tapioca flour.

Make a sponge of materials under the first group (except egg) and one-half of ingredients used from second and third group. Sponge should stand in warm place until very light, at least two hours. Work in balance of substitute mixture when sponge is light. Work in egg beaten slightly. Shape into loaf. Place in pan. Brush top of loaf with melted fat. Let raise to double bulk and bake in loaf pan in hot oven for one hour.

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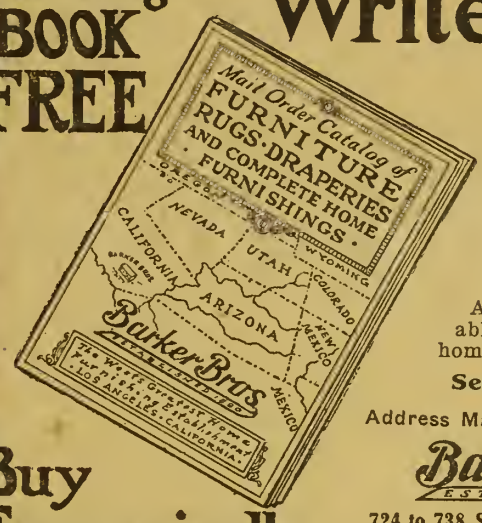

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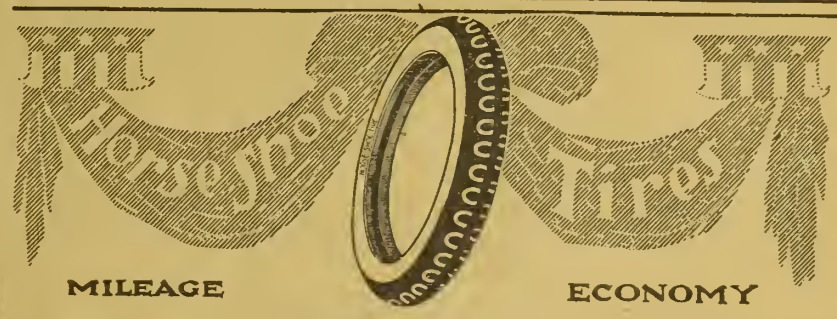


PACIFIC RUBBER CO.
433-5 West Pico Street
LOS ANGELES

DEALERS EVERYWHERE

Los Angeles Market

Los Angeles, August 7, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.
Cal. Extra. Creamery 50

Dairy Exchange price past week on extras.

July	31	Aug. 1	2	3	5	6
'18 ...	..	51	51	51	50	50

Rcts. wk. ending August 6, 200,500 lbs.

CHEESE

Brokers prices:
California fresh, lb. 26
Eastern Daisies 29
Oregon triplets 27

EGGS

Exchange quotations. Prices to retailers 2 to 3 cents higher.
Fresh extras 48
Case Count 47
Pullets 46

Dairy Exchange prices past week on fresh extras.

July	31	Aug. 1	2	3	5	6
'18 ...	..	46½	46½	46½	47	48

Rcts. wk. ending August 6, 862 cases.

POULTRY

We quote to producers.
Broilers .....30@33
Fryers 31
Hens, small, 20; heavy .....22@25
Colored 27
Ducks, lb., 22; ducklings .....25@28
Roasters 31
Roosters, old 17
Turkeys .....28@33
Geese 15
Rabbits, live, 17@18; dr.....40

LIVESTOCK

We quote cwt. f. o. b. L. A.
Corrected Wednesday morning, August 7, by the Cudahy Company.
Cattle—
Beef steers, av. 1000-1100 lbs. 12.00
Heifers, good 9.00
Cows, good 8.50
Veal Calves 10.00
Canners .....5.00@6.00
Hogs —
Av. 150 lbs. 17.00
Av. 175-225 lbs. 18.00
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers 12.50
Ewes 11.50
Lambs 16.00
Yearlings .....11.00@11.50

POTATOES

Wholesale selling prices:
New, cwt. .....2.50@2.75
Sweet, lb. 7

ONIONS

Wholesale selling price, cwt.:
Brown, cwt. 2.50
Garlic 10
White, lug. 1.10

VEGETABLES

Wholesale prices:
Artichokes, doz. 1.10
Jerusalem, lb. 7½
Beans—Wax, lb. .....5@6
Ky. Wonder .....6½@7
Limas, lb. 7
Beets, sk. 2.00
Cabbage, lb., 3½@4; sk. 3.50
Carrots, doz. 30
Corn, sugar, lug. .....85@90
Cucumbers, lug. .....65@75
Egg Plant, lb. .....6½@7
Horseradish, lb. 15
Lettuce, doz. .....30@35
Leeks 35
Mint, doz. 40
Okra, lb 14
Onions, green, doz. .....25@30
Peas, Tel., lb. .....13@14
Peppers, Chili, lb., 7@8; Bell 10
Parsnips, doz. 40
Parsley, doz. 20
Radish, doz. 30
Rhubarb, C. W. bx., 1.15; Strawberry 1.30
Squash — Summer, lug .....50@65
Tomatoes, cr. .....1.00@1.35
Turnips, doz. 40
Watercress, doz. .....35@40

FRUITS

Wholesale prices:
Apples, new, lug 1.35
W. Astrachan, bx. 2.50
Apricots, lug .....1.25@1.45
Bananas, lb. .....6½@6¾
Cantaloupes .....2.00@2.25
Tip Top 2.25
Rocky Ford 2.85
Crabapples, lug 1.25
Currants, cr. 1.85
Figs, bx. 1.00
Grapes, Malagas, lug 2.75
Seedless 2.50
Nectarines, lug .....2.00@2.50
Peaches, Freestone 1.25
Clingstone, lug 2.25
Pears, Bartletts, bx. 3.00
Plums, lug .....2.50@2.75
Satsuma, lug .....2.00@2.50
Strawberries, tray 1.10
Watermelons, lb. 2½

CITRUS

Lemons, packed, 6.00; loose 5.25
Juice 3.50
Oranges — Valencias 7.75
Grapefruit 4.50

BEANS

These are prices made by wholesaler to retailer:
Lady Washington 13.00
Limas 13.50
Pinks 8.00
Manchurian Reds 8.50
Baby Mex. 9.00
Garhanzos .....9.25@9.50
Small Whites 13.00
Blackeyes 8.50
Teparies .....8.50@9.50
Lentils 24.50
Mex. Red 8.75

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....15@18
Amber extracted 14
Alfalfa amber extracted .....15@16
Fancy white comb, per case....4.50@6.00
Comb lt. amber, per case.....5.00@6.00
Beeswax, lb. .....34@36

HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A.:
Tame Oat .....26.00@28.00
Volunteer Oat .....13.00@15.00
Wheat .....23.00@26.00
Barley .....23.00@26.00
Alfalfa .....19.00@22.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

Alfalfa hay $25.50 car lots f. o. b. L. A.; $23.00 f. o. b. common shipping points, taking $2.50 carload rate to destination.

GRAIN AND FEEDSTUFFS

Prices on Local Grain Exchange:

	Bid	Asked
No. 1 bright feed barley	$2.60	$2.65
Milo maize, local		3.50
Oat middlings		36.00

San Francisco Markets

San Francisco, August 6, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:
Extras 52
Prime firsts 50½

Prices Extras past week and year ago:

July	30	31	Aug. 1	2	3	5
'18 ...	52½	52	..	52	52	52
'17 ...	43	43	..	43	43	..

Rcts. wk. ending August 5, 348,600 lbs.

CHEESE

Dairy Exchange quotations:
Cal. Flats .....25½@27
Ore. Y. Am. 27½
Jack Cheese, full cream 26

EGGS

Dairy Exchange quotations:
Extras 49½
Selected Pullets 48

Prices Extras past week and year ago:

July	30	31	Aug. 1	2	3	5
'18 ...	49½	48½	..	49	49	49½
'17 ...	38½	38	..	41	42½	..

Rcts. wk. ending August 5, 6960 cases.

POULTRY

We quote to producers, lb.:
Per. lb.: Large hens, 28@30; Leghorn hens, 25@26; broilers and fryers, ¾ to 1 lb., 37@38; 1½ to 3 lbs., 35; old roosters 19@20; ducks, per lb., 22@28.
Belgian hares, live, lb. 15-17.
Squabs, doz. .....2.50@4.00

LIVESTOCK

Prices gross weight:
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.
Steers, lb., 10@12; thin, 8@9; cows and heifers, 7@8¼; thin, 4@5½; calves, 7½@11.
Sheep—Per lb. gross weight; Unshorn wethers, 11@11½; ewes, 9½@10; lambs, yearlings, 12@12½; milk, 14@14½.
Hogs—Hard grain fed, weighing 100 to 140 lbs., 16½@16¾; 140 to 300 lbs., 16¼; 300 to 400 lbs, 16½.

POTATOES

Wholesale selling prices at wharf, cwt.:
River, new, cwt. .....2.25@2.50
Sweets, lb. .....6@7½

ONIONS

Wholesale selling price on wharf, cwt.:
Garlic, new, lb. .....12½@15
New Red, sk. .....1.50@1.75
Clarksburg, sk. .....2.00@2.10

VEGETABLES

Wholesale selling price:
Beets, sk. .....75@1.00
Beans, String, lb. .....2@4
Limas, lb. .....2@4
Beets, new, sk .....1.50@1.65
Corn, green, sk. .....1.50@2.25
Cucumbers, lug .....50@60
Egg Plant, lug .....50@60
Lettuce, doz. .....15@20
Okra, lb. .....9@10
Onions, green, bx. .....65@75
Peppers, Bell, lug, 40@50; Chili ....25@50
Peas, lb. .....8@10
Squash — Summer, lug .....50@75
Italian, lug .....50@75
Tomatoes .....35@75

FRESH FRUITS

Apples, Gravenstein .....2.00@2.50
Red Astrachan .....1.25@2.00
Apricots, small lug .....85@1.25
Berries — Pr. ch.: Strawberries, 7.00@11.00; blackberries, 7.00@10.00; loganberries, 6.00@8.00; raspberries, 7.00@10.00.
Cantaloupes—Ponies, 1.00@1.25; standards, 1.25@1.50; flats, 40@50.
Crab Apples, small bx. .....65@75
Figs, bx.: Mission, double layer.1.00@1.25
Grapes, Seedless, cr. .....1.00@1.25
Black Prince .....1.00@1.25
Nectarines, bx. .....1.25@1.50
Peaches, cr. .....1.00@1.25
Pears, Bartlett, bx. .....1.25@2.50
Cullis, lug. .....65@1.00
Plums—Bx.: Burbank, 75@1.00; Climax, 85@1.15; Wickson, 1.00@1.25; Tragedy, 1.00@1.25; loose packed, bx., 50@75; 50.00 @75.00 per ton.
Pineapples, doz. .....4.50@5.00
Watermelon, lb. .....1½@2

CITRUS

Lemons, bx.: fy. 7.00; ch., 5.00@6.00; standard, 4.00@5.00; lemonettes, 4.00@5.00; oranges, 5.50@7.00; grapefruit, 4.00 @5.00.

BEANS

Limas .....13.10@13.25
Bayous .....7.75@7.90

Jobbers' prices, cwt., recleaned:
Small Whites .....Nominal
Large Whites .....Nominal
Mexican Reds .....7.75@7.90
Blackeyes .....7.00@7.20
Pinks .....7.00@7.15
Red Kidney .....11.75@12.00
Cranberry .....Nominal
Teparies .....8.50@8.75

DRIED FRUITS

Raisins: Associated prices 1918 are:
Muscats: Packages seeded, fancy, 36-16s, 9.625; fancy, 48-12s, 7.75; choice, 36-16s, 9.125; choice, 48-12s, 7.375. Bulk seeded: 25-lb. Bakers, 8.00; 25-lb. fancy, 8.85.

Thompson Seedless; packages recleaned, 48-16s to case, 9.90; bulk, recleaned, 36-12s to case, 8.00; package, recleaned, 25-lb. boxes, 9.25. Sulphur bleached — northern stock: Bulk, 25-lb. boxes, choice, 10¼; bulk, 25-lb. boxes, fancy, 10¾; bulk, 25-lb. boxes, extra fancy, 11¼. Soda dipped — northern stock — Bulk, 25-lb. boxes, 10.

Loose: 1-crown, 25 lb. boxes, 8½; 2-crown, 25 lb. boxes, 7½; 3-crown, 25 lb. boxes, 8; 4-crown, 25 lb. boxes, 8¾.

Layers: 3-crown, 20 lb. boxes, 1.85; 3-crown, 20 1-lb. trays to box, 2.00; 4-crown, 20 lb. boxes, 2.10; 6-crown, 20 lb. boxes, 2.95; 3-crown, 10 lb. boxes, 1.05; 4-crown, 10 lb. boxes, 1.20; 6-crown, 10 lb. boxes, 1.65; 3-crown, 5 lb. boxes, .65; 4-crown, 5 lb. boxes, .70; 6-crown, 5 lb. boxes, .90.

Sun-Maid clusters, 20 1-lb. cartons to box, 2.35.

Imperials, 4 5-lb. cartons to box, 3.40.

Vineyard run, 50 lb. boxes, 3.90; 100 lb. boxes, 7.50.

Sultanas. Packages, recleaned, 48-16s to case, 9.65; bulk, recleaned, 25-lb. boxes, 9.00.

Peaches — California Peach Growers quotes opening prices for 1918 crop f. o. b. factories California. Prices guaranteed to December 31.

Bulk basis and boxes unfaced 1 and 2 cents more.

	Practically Peeled	Yellows (Old style)	Muirs (Old style)
Standard	12⅞c	11¼c	11⅜c
Choice	13⅜c	11¾c	11⅞c
Fancy	14⅜c	12½c	12⅞c
Ex. Fancy	15½c	13¼c	14c
Slabs		10¼c	

Prunes and Apricots. The Prune and Apricot Growers' Association have named following prices on apricots:
Standards 9½
Choice 13
Extra Choice 14½
Fancy 16
Extra Fancy 17½
Extra Moorparks 19
Slabs 11

Cash on delivery price on all grades will be 8 cents with the exception of standards and slabs on which it will be 6 cents.

Prunes: The government will take all the 50-60; 60-70; 70-80 sizes. The quotations sent to the trade last night are as follows:

The bulk prices will be:

Sizes:	Price per lb.
20-30	17
30-40	10¾
40-50	10
50-60	9
60-70	9
70-80	8¾
80-90	8¼
90-100	7¾
100-120	4¾
Above 120	4¼

One cent per pound, and one and one-fourth cents per pound will be added for 50 and 25-lb. boxes.

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....15@18
Amber extracted 14
White comb, cs. .....4.50@6.00
Light amber comb, cs.....3.50@4.00
Beeswax 34

HAY

Under date of August 3, Scott, Magner & Miller says:

Receipts past week, 2432 tons. If the receipts continue as heavy as for the past two or three weeks we believe there will be no question but what a lower range of prices will prevail on this market as it has been most difficult during the week to maintain our present quotations.

Receipts of alfalfa have been moderate. Difficulties in pressing the hay probably are to blame. Considerable hay by cars from the interior districts of various qualities arrived during the week.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market — for prices to consumers charges of cartage, commission and handling must be added according to conditions:
Fancy Wheat Hay, large five wire bale .....26.00@27.00
No. 1 Wheat or Wheat and Oat Hay .....22.00@24.00
No. 2 Wheat or Wheat and Oat Hay .....19.00@21.00
Choice Tame Oat Hay.....24.00@26.00
Other Tame Oat Hay .....21.00@23.00
Wild Oat Hay .....18.00@22.00
Barley Hay .....18.00@22.00
Alfalfa, first cutting .....16.00@20.00
Alfalfa, second cutting .....22.00@24.00
Stock Hay .....18.00@20.00
No. 1 Barley Straw, bale .....50@80

GRAIN

Wheat: Base price for 1918 crop common white hard to farmers is $2.20 per bushel of 60 pounds, delivered in bulk at terminal warehouses. For sacks add 9 cents, less tare for weight of same.

Barley—New No. 1 feed, 2.40@2.55 per cental; milling, 2.55@2.65; off grades quoted down to 2.45.

Oats: Red feed, 2.60@2.70 per cental; do. seed, 2.75@3.00.

Corn: Nominal; none offering.

SEEDS

Prices in round lots, lb.:
Millet, recleaned.....5@5½
Flax .....8@8½
Hemp .....5½@6
Rape .....2½@5

Citrus Fruit Market

Los Angeles, Cal., August 6, 1918.

Eastern markets are snapping up all available supplies of oranges with no haggling over prices. As will be noted in auction sales Valencias are bringing in some cases over $9.00. There are few Valencias left in Southern California, at the present time only about 1500 cars, whereas at this time last year there were over 5500. With such a small supply on hand to fill the market until months later when the navel crop will come in, orange growers who are lucky enough to have anything to sell cannot anticipate anything but the very best prices.

Lemon prices have been lower during the past week owing to large receipts from California and especially heavy receipts from the Mediterranean. Presumably with the extremely hot weather now prevailing in the East all these stocks will be cleaned up and prices will again advance.

Shipments

Shipments of citrus fruits to date since November 1, 1917: Southern California; oranges 12,694 cars, lemons 4689, total 17,383. To same date last season, oranges 35,189, lemons 6955, total 42,144. Central California this season; oranges 2536, lemons 115, total 2650. Last season to same date; oranges 4655, lemons 164, total 4819. Northern California; oranges 203, last year same date, 845.

AT THE AUCTIONS

July 30

New York: 7 oranges, 1 grapefruit, 4 lem. Val. 6.00-9.10, lem. 2.60-6.60, grapefruit 2.90-4.25.
Philadelphia: 2 cars Valencias, 6.50-8.90, 1 lem. 4.90-6.70.
Cleveland: 2 cars lem., 6.30-7.85.
Pittsburg: 2 cars. Val. 6.70-8.45, 1 lem. 6.20.

August 2

New York: 7 Val. 6.65-9.30, 1 grapefruit 3.45-4.95, 1 lem. 3.80-5.55.
Cincinnati: 1 lem. 3.80-6.35.
St. Louis: 1 Val. 7:15, 2 lem. 4.05-7.20.
Boston: 2 Val. 5.75-8.45, 2 lem. 7.15-7.80.

August 1

New York: 11 Val. 6.55-9.55, 2 lem. 3.25-5.45.
Pittsburg: 1 lem. 6.60-7.65.
Boston: 1 Val. 8.55, 2 lem. 5.60-7.65.
Philadelphia: 2 Val. 6.35-8.90, 1 lem. 5.65.

August 5

Cincinnati: 1 Val. 5.70-7.00, 2 lem. 3.95-7.05.

Brentwood Irrigated Farms

In Eastern Contra Costa County.

Land Planted to Alfalfa, also first class orchard land. Tracts of twenty acres and up with easy terms of payment. For Prices and Descriptive matter address

Balfour Guthrie & Co., Land Dept., 350 California St., San Francisco

Cleveland: 1 Val. 4.95-8.10, 1 lem. 6.00-6.75.
St. Louis: 1 Val. 7.25, 2 lem. 5.45-6.65.
August 6
New York: 6 Val. 5.85-9.00, 2 grapefruit 3.20-5.30, 3 lem. 1.25-6.30.
Phiiadeiphia: 5 Val. 4.90-8.10, 1 lem. 5.65-7.05.
Boston: 3 Vai. 5.65-7.55, 2 lem. 2.70-3.25.

MARKET NOTES

Summer crop of canning tomatoes is being delivered freely. The acreage is perhaps 30 per cent greater than last year. Weather conditions have been most favorable.

Shipments of potatoes have been normal in the southern end of the state. Shipping of the spring crop has been nearly finished. Insects and fungus have been more serious than in former years and an abnormal quantity of culls has resulted.

Onions near Stockton have been badly infested with thrips. The acreage will be less than last year, but with favorable weather conditions and not too serious insect injury, the output will be close up to normal.

The federal crop reporter estimates that at least 2000 acres of asparagus have been plowed out in California this year. This year's output was nearly ten per cent short of that of 1917. The ioss is due to unsatisfactory labor conditions.

Turlock reports prospect for watermelon crop fairly good; in fact, much better than last year. Shipments are earlier; sizes about the same as last year, but few aphis; some damage from blight; prices ranging $19 to $29 per ton.

Colorado celery began going to market on July 15, but the bulk of the crop will not be moved until September.

Oregon is becoming a great broccoli shipping center. Field setting for this season's crop is just ending, and in spite of dry weather shows good start. Acreage is reduced 30 per cent, but production will be greater because of better seed than last year.

The federal bureau of crop estimates finds that there has been an increase in the planting of cabbage for krout making by about 13 per cent.

Caiifornia gariic has been confronted by such unfavorable weather conditions that this year's yield will not be 60 per cent of normal. Growers are receiving from six to nine cents.

Fruit and garden truck shippers are concerned over having losses due to delay in transit made good by railways under government control. Heretofore any loss caused by negligence or inability of the railway to make prompt delivery resulted in a claim filed with the company by the shipper. This has usually brought recompense for the loss. As yet, there is no information as to the attitude of the government regarding the great number of iosses which unsatistory shipping conditions during the past few months have caused.

The bureau of markets has established an inspector and reporter at Turlock melon and cantaloupe shipping point.

Central California is now shipping out great numbers of cars of Thompson Seedless grapes.

The heaviest fresh fruit shipper from California at this moment is the pear.

PARTIAL LIST CALIFORNIA FRUIT AND VEGETABLE SHIPMENTS

From post card reports to the Los Angeles branch of the bureau of markets, United States department of agriculture, report is made of the following shipment of cars of products from California for the week ending July 29: Apples, 9; apricots, 101, (shipments of apricots cover much of the month of July because of delayed reports); cantaloupes, 72; dried apricots, 9; dried beans, 30; dried peaches, 1; dried pears, 3; dried peas, 2; dried potatoes, 3; dried prunes, 9; garlic, 9; grapes, 108; loganberries, 13; mixed fruit, 124; mixed vegetables, 54; mixed fruit and vegetables, 32; mixed dried, 2; onions, 34; peaches, 174; pears, 419; plums, 189; potatoes, 460; raisins, 170; seed spinach, 1; tomatoes, 39; watermelons, 106; Arizona cantaloupes, 261; Arizona mixed fruits and vegetables, 1; Arizona grapes, 27; Arizona watermelons, 5; Nevada cantaloupes, 15.

From post card reports to the Los Angeies branch of the bureau of markets, United States department of agriculture, report is made of the following shipment of cars of products from California for the week ending August 5: Apples, 6; apricots, 50; cabbage, 3; cantaloupes, 310; dried apricots, 7; dried beans, 40; dried peaches, 2; dried prunes, 9; garlic, 6; grapes, 257; lettuce, 3; logan berries, 8; mixed fruit, 147; mixed vegetables, 45; mixed fruit and vegetables, 29; mixed dried fruit, 4; nectarines, 5; onions, 51; peaches, 1020; pears, 667; peppers, 1; piums, 238; potatoes, 214; raisins, 169; strawberries and other berries, 1; tomatoes, 22; watermelons, 78; Arizona cantaloupes, 27; Arizona watermelons, 5; Nevada cantaloupes, 9.

WEATHER ONDITIONS

San Francisco, Cal., August 3, 1918.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	T	.20	.11	68	52
Red Bluff	T	.00	.00	100	64
Sacramento	.00	.00	.00	100	56
San Francisco	.00	.00	.01	70	51
San Jose	.00	.00	.00	84	50
Fresno	T	.00	.00	102	66
San Luis Obispo	.00	.00	.01	92	54
Los Angeles	.01	.09	.00	94	60
San Diego	.00	.00	.00	82	64

T indicates Trace.

Squirrel and grasshopper drives in Glenn County under the leadership of Harold E. Wahlberg have been a feature of the season's activities of the farm bureau army.

"MORE FOOD"

"More Food" is the command coming from Europe and from the leaders of our own nation. It does not come as an appeal; it is a command from the people who are fighting for the liberties of the world, and we are all hastening to obey. But there is a shortage of horses, of mules, of farm labor; hence improved implements, machinery and farm power must be secured. For this reason the tractor never attracted the attention which it has for the past few months. Producers are asking: "Is the tractor reliable?" "Do the implements drawn by it do as effective work?" "Is its operation too expensive?" and a thousand and one other questions.

They Will Be Answered

Now comes the opportunity of answering these questions. On September 17-21 there will be a demonstration given by members of Traction Engine and Implement Dealers' Association near the city of Los Angeles in fact, half a mile east of the city limits on the Whittier boulevard. This is the third annual demonstration, and, as usual, there will be men there qualified to answer the questions above referred to. More, the tractors will be put through their paces. There will be 40 models of tractors displayed and demonstrated, and a far greater number of various implements and accessories. Big circus tents, which the management assures us will cover 60 acres of ground, are to be erected. There will be tractors from the small hand operated garden cultivator type to the monster 75's.

Special features will be announced in proper time.

NO KEROSENE ON TIRES

Here's a suggestion from the Goodrich Rubber Company. When one washes the car with a mixture of kerosene and water make sure the liquid does not reach the tires. Washing cars and washing tires are two entirely different propositions.

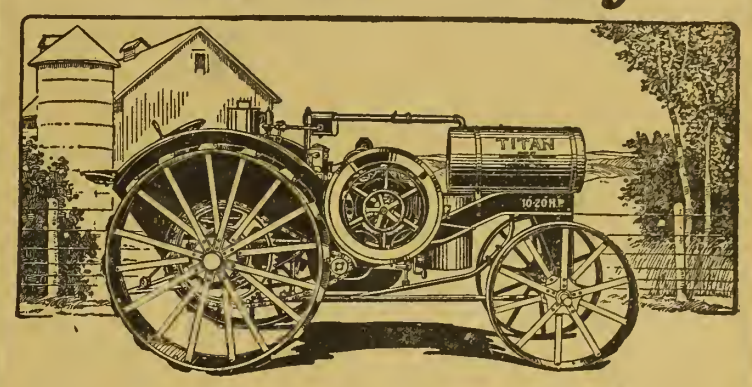
A common method when washing a a car is to mix kerosene with water. This is advisable when washing the body or wheels, to remove mud and dust from the varnish, but no kerosene should reach the tires because kerosene eats rubber. Water alone is best for washing tires. Soap and water will not injure the tire provided the tire is wiped clean with a sponge dampened with clean water and then dried with a well wrung cloth.

In many sections of the country the main traveled highways are well oiled. After every run on an oil road it is imperative that the tires be washed thoroughly to make certain all oil is removed. If it is impossible to remove oil and dirt that has become caked on the tire with water alone, water slightly diluted with kerosene or gasoline may be used safely provided the tire is cleaned and perfectly dried afterwards.

Unusual care should be exercised with tires having been run several thousand miles. In most instances such tires have many small cuts and very often have parts of the fabric exposed. Oil of any kind which seeps into these small crevices and reaches the tire fabric tends to separate the fabric and deterioration sets in. Such holes should be, and can readily be repaired by plugging with rubber cement.

In melting chocolate always butter the pan to avoid waste.

Tractor Safety



FOR twelve years and more, shrewd and careful American farmers have kept us busy filling their orders for **International, Mogul,** and **Titan Kerosene Tractors.** In those twelve years our tractors have had to meet every possible combination of field and climate conditions. The types and sizes we sell today are the ones that have successfully met every test. Any one of them is a safe tractor to buy.

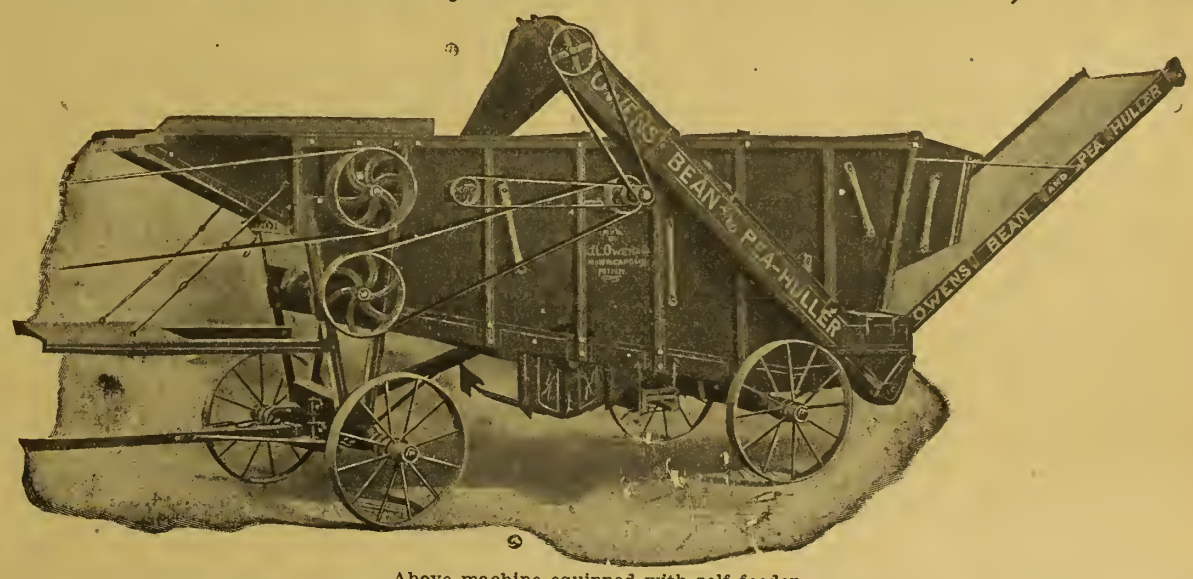
One great advantage to farmers who buy our tractors is the fact that we can also supply all the implements and machines that go with the tractor. We know farm needs. Buying from us, you get a complete, well balanced outfit for field or belt work.

Another advantage is our extensive dealer and branch house organization. A telephone call to a nearby dealer brings you promptly a repair, replacement, or adjustment for any machine we sell.

Look at it any way you will, you cannot make a safer tractor investment than to buy an **International, Mogul** or **Titan** kerosene tractor. See our dealer in your town, or write us for full information about a safe tractor for your farm.

International Harvester Company of America
(Incorporated)
Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

Owens 20"x32" Double Cylinder Bean and Pea Threshers, Third Size



Above machine equipped with self feeder.

Owens Bean Threshers made in six sizes from the largest to the smallest size, embody the essential features necessary to **thresh all varieties of Peas and Beans** direct from the vines without splitting the seed.
—They have more separating space and capacity than any other machine on the market.
—If you need a Pea or Bean Thresher at all get an "Owens."
—They are the Standard the world over. Built in sizes to suit any size grower, from the smallest to the largest, and there are none better at any price.

Send for Free Catalogue.

Threshers in stock at Lompoc, Santa Maria, Guadaloupe, Watsonville and Salinas.

G. H. McLean, Factory Representative, Lompoc, Cal.

A Message from the Secretary of Agriculture to American Farmers

TO THE PATRIOTS ON THE FARMS:

You are asked to undertake another offensive—to go "over the top" this fall for a great harvest of wheat in 1919. I need give only a few figures and facts to impress you with the increasing and urgent need of our people, our armies, the allied peoples and their armies for large supplies of American wheat.

Our reserve supply or carry-over from the 1917 crop is practically exhausted and is the smallest on record. The need of building up reserves of wheat is evident. Although this country produced a small crop of this grain in 1917, the total exports of wheat in excess of imports, including flour in terms of wheat, amounted to approximately 100,000,000 bushels for the year ending June 30, 1918. This is in comparison with 178,000,000 bushels exported in 1917, 236,000,000 bushels in 1916, and 331,000,000 bushels in 1915. It was possible for the United States to export wheat in large quantities in 1915 and 1916 only because of the large wheat crops of 1912-13-14-15, which gave this country an accumulation of stocks of this grain. Both the 1916 and 1917 crops were smaller than any crops since 1911 and besides this there was a greater demand for seed wheat and an increased population to be fed.

Moreover, it must be borne in mind that the carry-over in all the ten importing countries in Europe was practically exhausted this year before the new harvest; that the normal requirements of the exporting countries are increasing instead of diminishing; that some losses in storage and transit may be expected to continue; and that it is highly desirable that a surplus should be accumulated as insurance against partial crop failure next year.

You have been asked to sow to winter wheat this fall not less than 45,000,000 acres — an increase of 7 per cent over last year's sowing — and the Department has suggested that an even greater area, 47,500,000 acres, is desirable. The increased planting asked of each State has been carefully determined with regard to its local conditions and its reasonable capabilities. Your county agent can tell you the quota assigned to your State and you can apply the responsibility to your case.

You have occupied and do occupy the first line trenches of the food army. You have to fight difficulties too. I am not unmindful of these. In the Department of Agriculture we consider them daily, and daily we give our best efforts to help you meet them. You know of the difficulties in your community, but I know of them in many communities of many States, and so seriously do they impress me that I might almost consider them insurmountable had not American farmers last year, and again this year, revealed the true American fighting spirit and ability to meet serious situations. They will not let the war fail because of deficient food production.

Let us sow liberally for a big harvest in 1919. It has been called the Liberty Wheat Harvest. We all hope it will be. But let us undertake the task with the determination that we will sweat our blood for many more if need be before we yield one measure of our freedom to a Prussian domination. Let us fight in the furrows.

D. F. Houston.

Secretary of Agriculture.

Contributed through Division of Advertising United States Govt. Comm. on Public Information

This space contributed for the Winning of the War by

California Cultivator

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — August 17, 1918 — No. 7

Milo as It Grows in Imperial

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

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Saturday, Aug. 17, 1918

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

The hog belt and the corn belt have been practically synonymous, and as a rule the larger hog producers have felt that the only—with accent on the only—satisfactory hardening feed was Indian corn, but during the past few years the entire Southwest, or, we may say, the semi-arid portion of the United States from Oklahoma to the Pacific, has been securing excellent results from sorghum grains. Analysis shows these to be of nearly the same feed value as Indian corn. In some sections durra, Jerusalem corn, rice corn, or Egyptian corn, has been the favorite. In other sections kafir has been generously planted. A more recent favorite is feterita, but in California we believe there has been more general planting of milo. One reason for the favor shown to yellow milo in California is apparent from a look at cover of this issue of the California Cultivator. This photo was taken in the Imperial Valley which produces thousands of tons of this grain. Down there they call it "corn", which is not a fortunate term, for it sometimes confuses it with the grain of which this country produces nearly three billion bushels. There will never be that amount of milo produced, but it is a wonderful grain, and California may well encourage its more general planting.

THE GRANGE

Frank L. Hunt, master of the California State Grange, gives us a word regarding the work of that great organization in California. It is one of California's oldest institutions, but, strange to say, is entirely confined to the sections of the state north of the Tehachapi. It is worthy of more general extension, for its years of service in this country have resulted in the accomplishment of much good.

ANOTHER LABOR SAVER

Every item which calls attention to the saving of a man or a number of men in labor operations is of value. Hence we are glad to call attention to the article on Page 149 of this issue, written by Professors Woglum and Prizer of the department of agriculture. The department costs this country many millions annually, more than a score of them we believe. It seems like a great sum, but it is continually maintaining in the field men investigating economic as well as scientific questions. Some of the scientific investigations have yielded little to the practical farmer. Hence it is well to note when these practical man saving devices are brought to the attention of practical workers. Mr. Woglum has been engaged in fumigation investigations for many years, and his work has resulted in many such practical aids to the citrus grower.

GAS IS UP

Gas has had another mark-up, this time by order of the fuel administration. It is not sufficient to cause material shrinkage in its use, and it is now hoped that there will be no necessity for issuing "gas cards" or of putting any serious restrictions on its sale. To the end that it may not be necessary to do this, may we not all be watchful of our wastes. The consumption is enormous at best, and the needs on the other side must first be fully met.

These are topsy turvy days. The time was when one who put down a full pork barrel and filled his cellar with provisions was considered wise, while the hand-to-mouth purchaser was looked upon with little respect; today we carry home our sugar in two pound packages and everything else in mere dribs. The builder of houses or the maker of improvements was formerly considered the friend of the community; today he is using the labor needed at the front or behind the lines. But with gasoline or power machinery there is still credit for the progressive man in using so far as actual need demands, for power machinery saves labor. But with our use of power let us not be gas slackers.

DELIVER US FROM EVIL

One minute out of the 24 hours may well be spent in a word of prayer for Old Glory and the boys who are fighting for it on the other side. The congress of the United States has almost unanimously resolved: "That the President is requested to commend by proclamation to the people of the United States observance in their homes and elsewhere, until the end of the war, of the practice of prayer for at least one minute at noon each day to God for victory for our cause in the existing war."

One senator, in opposing the formal adoption of such a resolution, referred to the story of the two little girls who were hurrying to school, fearing that they might be late. One of them thought that it would be a good plan for them to stop, kneel down and pray that they might get there on time; the other suggested that they had better run and pray as they ran. The senator suggested that instead of stopping, that moment be given to speeding up still more the energies of all the people. We are glad the better judgment of the majority prevailed. We will run all the more swiftly for one short moment's respite and appeal for deliverance from the greatest evil which ever threatened this world.

WHEAT 1919

The fall planting for next season's wheat of at least 47,500,000 acres is the desire of the department of agriculture and the food administration. It is estimated that such a planting would result in 670,000,000 bushels of winter wheat. This will be an increase of 12 per cent over last year's planting. A few months ago when it looked as if our Allies would not be well fed, possibly brought almost to starvation point, unless more wheat could be shipped, appeal was made to America to save from her own needed supply. This resulted in 140,000,000 bushels being saved and shipped to Europe. That wheat has been one great factor in the ultimate winning of the war. The same appeal will now be made to American farmers to plant this year 47,000,000 acres.

The 1918 harvest will not yield the hoped for billion bushel crop; in fact, it will be 100,000 bushels short of that, but if the desired acreage of winter wheat for the 1919 crop is planted and reasonably satisfactory weather conditions given, the next crop should even pass the billion bushel mark.

California's production is 513,000 acres minimum, or 538,000 maximum, which is exceedingly small compared to the acreage of Kansas, the great wheat state. She is expected to plant at least 9,479,000 acres, which is 100 per cent of her planting for 1917.

CHANGE OF ADDRESS

"Change the address of my paper to ——," with name signed, is often received by the circulation department of the California Cultivator. Then the circulation manager holds up his hands and looks helpless. Hence, we ask every subscriber who wishes the address of his paper changed to give his old as well as his new address. Thirty-one or thirty-two thousand names cannot be looked over to locate the former address, and no subscription list is made up alphabetically by names, but according to post offices. When we know whether a subscriber lives in Redding, Reedley or Riverside his name can be immediately located.

Pardon us again then for suggesting: "Always give former address."

This Week's War Notes

An oil tanker, the Frederick R. Kellogg, owned by a Los Angeles oil company, has been torpedoed off the Jersey Coast. She was a vessel of 4450 tons.

Pacific Coast cities are enjoying occasional "lightless nights", crowds turning out and enjoying looking at the streets with the usual glare of lights off.

Italian aviators flying over Vienna have dropped leaflets giving neutral press reports of the war situation. Vienna citizens paid as high as 40 crowns for leaflets, notwithstanding severe penalties were possible for simply touching one of the leaflets on the street.

After more than a year of testing out of American trops with both French and English, the American army is now recognized as a part of the defense on the western front by by its being assigned that portion of the battle line south of the Marne from Verdun and running to Alsace.

The British government has issued a declaration formally recognizing the Czecho-Slovaks as an Allied nation, and the three Czecho-Slovak armies are regularly waging warfare against the Central Powers. Allied diplomats in Russia have demanded an explanation of Lenine's threat of a declaration of war against the Allies.

W. R. Hearst has issued an explanation of his several meetings with von Bernstorf and Bolo, denying, however, that he conferred with von Bernstorf and Bolo Pasha in his own home. The attorney-general, however, has issued a statement in which the assertion is made that Hearst entertained both Bolo and von Bernstorf in his home.

Geneva dispatches refer to clamoring mobs on the streets of Munich in which the cry was raised; "Berlin is robbing Bavaria." German papers which chronicled the second battle of the Marne as a Teuton "success" now frankly admit the Picardy defeat has brought a critical situation. The German people are asking more information as to the submarine situation.

Internal revenue collector at New York has been rounding up income tax slackers, securing over a million dollars from delinquents who had failed to report. One payment of $100,000 is reported, but the greater amount was collected from longshoremen and ordinary laborers whose immense wages brought them in the taxpaying class. Ignorance of the law is usually the excuse, but many penalties were assessed.

Submarine activities continue on this side of the Atlantic, three vessels being reported sunk on Tuesday. One of these it is thought was sunk by a wireless controlled torpedo. The officers of the vessel, who were saved, report the torpedo as having passed under the vessel and turned back. Another submarine was reported to have released chemicals on the waters of the incoming tide at Smith Island, North Carolina, which released poisonous gases, overcoming six guards. No fatalities resulted.

Montdidier, Fismes and many smaller towns, some of them important munition centers of the German army, and hundreds of square miles of territory have been captured during the past week. At the present moment the enemy resistance has stiffened, and large numbers of reserves are apparently being brought up. The Allies continue to exert pressure. Peronne, a great German base, ten miles behind the present battle line in Picardy, is observed to be in flames, and it is thought the enemy is destroying great stores which it is impossible to move. Some of the most effective work in Picardy has been performed by British cavalry. Its swiftness in action has resulted in the capture of thousands of prisoners. Each day's reports indicate continuous sifting through of German prisoners, but exact totals are not available. It is thought the northern offensive has at least resulted in the capture of 40,000 German prisoners including 1000 officers, and more than 500 guns. Reports indicate remarkable showing by American aviators along the Vesle front.

The situation in Russia is becoming more complicated nearly every day, and in a way more favorable to the Allies. Amsterdam reports bloody anti-German riots raging in Ukrania and that the Bolsheviki government which was driven from Petrograd to Moscow has now been driven from the latter city. Amsterdam also reports German troops marching toward Petrograd with the apparent intention of discouraging the Allies from their work in the extreme north. The Allies hold on the Murman coast and Archangel has been strengthened. Tokio reports that the Allies have refused to recognize any form of government in Siberia which does not have the full support of the people. London reports large shipment of Red Cross supplies to Vladivostock. British troops, formerly landed at Vladivostock, have proceeded inland to the Usuri River front. They were given enthusiastic reception by the Czecho-Slovak forces. The Allies are ignoring the threat of Lenine that a state of war, especially against Japan, will be declared unless military forces of the Allies are withdrawn from northern Russia. Major General Wm. S. Graves has been designated commanding officer of American forces in Siberia. Philippine troops have been transferred to Siberia.

Early Establishment of Blastophaga in California

By G. P. Rixford, Bureau of Plant Industry

AT THE Fig Institute at Fresno last year my name was put on the program without my knowledge while I was absent on a trip to Washington, D. C. However, I returned a few days before the meeting and attended, but did not have time to prepare a formal paper on the subject assigned to me. The title assigned to Mr. Roeding on the program gave no indication of the subject upon which he addressed the convention. It was devoted largely to the introduction of the blastophaga into California and criticism of the discoveries of Walter T. Swingle and the writer and came upon me so suddenly that I was not prepared at the moment to offer an effective reply.

The article by Mr. Roeding as published in the proceedings of the Fig Institute and in the Cultivator of July 13 states that in all fairness to him, Mr. Roeding, he considers it the duty of Messrs. Swingle and Rixford to present more conclusive evidence than heretofore presented in connection with the early establishment of the fig wasp in this state. It is difficult to understand Mr. Roeding's attitude on this question. If anyone has a right to complain it is Mr. Swingle. If Mr. Roeding's contention is true, then all the credit for the successful introduction of the beneficient insect into this state is due to Mr. Swingle. But Mr. Swingle is a conscientious man and would never claim credit for anything to which he is not entitled. Some of the evidence we have heretofore presented in support of our contention as to the early establishment of the blastophaga in the Gates and other trees has already been published, but as I now have my notes before me and many of the members of the Institute may not be familiar with it, I will present it again with additional particulars which have not been previously printed. Let the reader bear in mind that the insect was first established at Mr. Roeding's place from Mr. Swingle's shipments from Algeria in 1899.

Mr. Swingle and the writer attended the fruit growers' convention at Stockton in December, 1910, and presented a paper entitled, "The First Establishment of the Blastophaga in California." At this meeting we heard that some of the Smyrna fig growers in Stanislaus County were digging up bearing trees on account of the difficulty of securing pollenizing material. After the close of the convention we visited Ceres and by means of the telephone called together as many fig growers (13 in number) as could be reached on short notice. Mr. Swingle addressed the meeting, telling the growers not to dig up any more trees as the United States department of agriculture had leased the Maslin fig orchard at Loomis and would furnish them with capri figs at the bare cost of gathering and boxing. At this meeting we first heard of the old capri fig tree on the ranch of Samuel Gates, ten miles west from Modesto. It was not convenient for us to visit the tree at that time, but the writer did visit it shortly afterwards in company with the Rev. Homer K. Pitman, pastor of the Presbyterian church at Modesto, himself a Smyrna fig grower. We found the old tree to be about 45 feet high with a spread of branches of 40 feet and circumference of trunk of eight feet. At this time it was carrying a good mamme crop. Most of the Gates family were at home and were subjected to a careful questioning regarding the history of the tree and its inhabitants. Mr. Gates being asked how long the tree had carried an overwintering crop, he answered. "Ever since we purchased the place in 1868." The statement was confirmed by Mrs. Gates and their son and daughter, who were present and also afterwards by the other son, then a resident of Alameda.

At this point in the interview, the daughter, Mrs. Green, said, "I am 36 years old and as long ago as I can remember, I tried to get figs I could eat from the old tree and they were all full of these "little winged ants." Returning to Modesto I asked Mr. Pitman what he thought of the statements. He replied: "Those people told the truth."

Soon after this visit Mr. Pitman wrote to Mr. Swingle as follows:

Modesto, Cal., Jan. 26, 1909.

Mr. Walter T. Swingle,
Monterey, Cal.

Dear Sir:

In addition, permit me to give you some more information concerning the Gates capri fig trees. Mrs. Emily Ross, a neighbor of mine, moved to the old town of Tuolumne City in May, 1869. This is about three miles from the Gates Ranch. She lived there two summers, coming back to Modesto in January, 1871. While there she was at the Gates place many times and tried to find edible figs on the capri trees. She is positive in her statement that they were "full of little black winged ants."

This evidence takes us back to a very early date and is to my mind absolutely conclusive.

Sincerely yours,
(Signed) HOMER M. PITMAN.

After some effort Louis Adams who planted the tree in 1867, the year before he sold the place to Mr. Gates, we located. He told the writer that he purchased the old fig tree as well as all his other trees, from the late W. B. West, nurseryman of Stockton. The writer spent considerable time in hunting up old capri trees and found more than 50, nearly all of which were of the Milco variety and almost all were traceable to the nursery of W. B. West.

Two old trees were found three miles from Lathrop, one of them about the size of the Gates tree. I mentioned these trees in reply to strictures by Mr. Roeding at the Fresno meeting. He stated to the convention that he established the wasp on these trees. He had apparently forgotten that he asked me soon after I found them for the names of the owners and their location. If necessary I can name a half dozen old residents of the locality who positively assert that they were unable to find edible figs on the trees because infested with the insects. He also claimed to have established the insect on the seven trees belonging to Mr. Logan, the Stockton photographer. On April 24, 1909, in reply to a question, Mr. Logan told me Mr. Roeding never sent the blastophaga to his trees and that the insects infested them years before he purchased the place in 1903, but said he did not wish the fact published because he had a contract with Mr. Roeding for the figs. The trees were planted by Dennis Crane about the year 1871. The son of Mr. Crane says the insects were in the trees from about the time they were planted. J. F. Joyce, an old settler and neighbor of the Cranes confirmed the statement. At one place in his article, Mr. Roeding says: "Another strange feature in connection with the Gates tree is that Mr. Watkins and others at Ripon have trees which are not much over five miles from the Gates tree, which showed no signs of infestation until colonies of wasps were actually placed in these trees."

I have no doubt that Mr. Roeding placed the wasps in some tree in the vicinity of Ripon, but if it is worth while to continue the controversy, I can produce an affidavit of a prominent fruit grower of the region asserting that the insect was established in some trees in the neighborhood several years before Mr. Roeding introduced them.

About this time the writer was in Stockton and called on Dr. Langdon at the Clark Sanatorium. He told me that Thomas Dorsey, five miles north of Oakdale, had a capri fig tree which had carried the insect for 30 years. I also called at the office of Mr. Peters, son of the late J. D. Peters, a prominent business man of Stockton. It being Saturday, the office was closed, so I called at the residence of his mother, widow of J. D. Peters, an alert and intelligent lady. I found the son had gone to the ranch at Atwater. I stated my errand which was to consult her son as to what he might know about the fig activities of G. N. Milco, who was associated with his father in the buhach business. Mrs. Peters said you may be interested to know that I was one day in the office of my husband, when G. N. Milco came in and showed us a number of figs from which little winged insects were issuing. Milco told us that the Smyrna fig could not be grown without this little bug. I said, Mrs. Peters I am much interested in this incident. Can you tell me the date of this occurrence? She replied she could not tell me exactly, but that the meeting was in Mr. Peters' old office, a year or two before the new building on Channel Street was erected, and added, "When you go out you can see the date of erection on the coping of the new building." A glance at the upper course of granite showed the date of 1888 cut in the stone. Here then is undisputable evidence that the insect had arrived in Stockton 11 or 12 years before it was established at Mr. Roeding's place. Milco was a Dalmatian, well informed on horticultural matters, a promotor of the buhach industry, an importer of fig trees and planted one of the first pistachio nut orchards in Fresno County. His name was attached to the Milco fig by John Rock, according to the old records of the California Nursery Company at Niles, though he did not import it. Mr. Roeding has asserted that the Milco never carries an over-winter crop until it is four years old, and therefore it was impossible that the fig insect could have been brought to California on the trees imported by W. B. West in 1865. The report of this importation by Dr. Gustav Eisen does not state the age or the size of the trees. But there is nothing impossible about it as I know of instances where the Milco has carried through a winter crop on trees the second year from the cutting. I have myself carried mamme capri figs in good condition six months on cuttings, taken from the tree in December.

I have no desire to detract in anyway from the important work Mr. Roeding has done in establishing the Smyrna fig industry in California, but he has demanded proof to sustain our contention and I have here given all that is necessary to convince any reasonable mind.

Growing Milo in Imperial Valley

Written for California Cultivator by J. Paul Hatch

WHEN one takes into consideration the fact that 50 per cent of the acreage planted to milo in California is raised in Imperial Valley, it would naturally appear to be a crop of some importance there. Most any kind of soil, with enough water and a little cultivation, will produce the crop.

There are various methods used. For an early crop some plant in February or March and harvest in July and August, and if they are inclined to be ambitious they cut down the stalks close to ground and remove from field, irrigate and cultivate and raise another crop of grain to harvest in the fall. If the first crop is harvested and the field just irrigated, new side shoots will grow out near the top of old stalks and produce a second crop in the fall, but not as heavy a crop as if the stalks were cut off near ground and a new crop produced in that way. Many farmers plant a winter crop of barley and harvest in the spring, then plow or disk up field and plant, making a fine crop early in the fall. Some follow the practice of burning off the barley straw and stubble fields before preparing the ground for milo, but it is considered a bad thing to do, for the soil is more benefited by the humus produced by working the straw into fertilizer than by the small per cent of ash left after burning.

A good many plow or disk up their fields dry and level, then plant, and irrigate afterwards. Then as soon as milo is up enough to permit working it, they cultivate. Others irrigate their fields first and plow or disk as soon as possible afterwards and plant seed. The most common way of planting is by the two row corn and cotton planters, leaving about 1½ feet space between rows and running lengthwise of lands, yet I have seen a little planting done going crosswise of lands and borders. Many plant their milo on their fields after leveling flat; others, on the ridges between furrows left for irrigation; still others, in the deep trenches left for irrigation. The latter way is no doubt an excellent method to follow when planting late in heat of summer.

When the grain is ripe it is usually harvested by hand labor, cutting off heads with a grape knife and hauling to stacks where it is threshed. Milo in Imperial Valley will produce from one to four tons to the acre in one season, the larger yields of course from the two crops. The dwarf brown milo is the variety mostly raised, but recently a white seeded milo has been produced which is going to prove a winner as well as the brown. Feterita is grown, but not so extensively as milo as it shatters more than milo while handling in the head. All other sorghum grains do well here.

The production of syrup from sweet cane sorghums has just started and will, no doubt, be increased rapidly. A great deal of milo is now put into silos each year and makes excellent silage. One man told me that he threshed more milo last season than he had in all three previous seasons put together.

The price of milo was $66 per ton at close of last season and the prospects for this season's yield are excellent.

Agricultural News Notes of the Pacific Coast

Northern California

Hop picking has begun at Wheatland.

Pleasanton, Alameda County, reports a record grain harvest.

Rice growers of Butte County are suffering from an invasion of ducks.

Shipment of 1100 lambs was made last week from Cloverdale, Sonoma County.

Beginning August 1 all railroad freight shipments must be paid for in advance.

Good yields of wheat, barley and oats are reported hy threshers in Nevada County.

Large tracts of grazing land in Sierra County have been ruined by the army worm.

Grape and hop men have been conferring with Senator Phelan on prohibition legislation.

Work has begun at Orland on permanent buildings to house exhibits of the Glenn County fair.

Employes of the Marysville cannery have all taken the oath of allegiance to the government.

The Alameda County Farm Bureau has taken up the campaign to increase mutton and wool production.

The Pacific Coast Land and Industrial Exposition is planning for a big show at Oakland September 9.

The Northern California Counties' Association will meet at Weaverville, Trinity County, September 9-11.

Residents of Sacramento are appealing to the food administration for relief from the advanced retail price of milk.

The Humboldt County Dairymen's Association held its fifth annual picnic at Loleta on the last Saturday in July.

Grass Valley, Nevada County, is shipping out Bartlett pears to Eastern markets, about one carload a day going forward.

A large detachment of men from the Mare Island navy yard will be encamped on the fair grounds at Sacramento throughout the fair.

The big new cannery at Martinez, Contra Costa County, is now ready for operation. It will handle 30 tons of tomatoes in nine hours.

The management of the Humboldt County fair is trying to secure the Allied War Exhibit for the fair to be held at Ferndale August 20-24.

The olive growers of Placer County met at the Lincoln cannery on August 10 to discuss measures for securing processing of olives within county.

Butte County reports its rice crop as looking exceptionally well and if water shortage does not become too serious maximum crop will be produced.

Placer County olive growers will meet at the cannery at Lincoln, Saturday of this week to discuss processing at home the olives grown in that county.

A fruit packing school was conducted the first week in August by the Nevada County farm bureau. There were 50 attendants. The sessions were held at Grass Valley.

The prune growers and fruit packers of Sonoma County met at Healdsburg recently to discuss the labor problem. After considerable discussion it was decided to set the price for gathering prunes at $4.00 per ton.

Central California

Tulare County expects a heavy prune crop.

The coming raisin crop is estimated at 180,000 tons.

San Jose canners are paying $20 a ton for tomatoes.

Tulare County is fumigating its citrus groves for soft gray scale.

Oakdale, Stanislaus County, is harvesting its higgest crop of wheat.

Atwater, Merced County, shipped its first carload of peaches to Canada.

The Valley shows over 15,000 acres of alfalfa signed up with the new association.

Woodlake, Tulare County, expects to send out two carloads of grapes a day until October.

Mt. Whitney Light and Power Company is appealing for increased electric power rates.

Western Fresno County is finding poor success in getting laborers to stay in harvest fields.

Inspectors in Fresno County have condemned several cars of table grapes picked too green.

Possible jobs in raisin picking is bringing large numbers of families into the San Joaquin Valley.

Farm Adviser Washburn of Santa Cruz County is urging farmers to put a few sheep on their places.

More careful estimates of citrus groves of Tulare County indicate not far from 50 per cent output.

The Corcoran farm bureau auction sale of fat hogs resulted in prices ranging from $14.25 to $15.75.

Three cents per tray for picking Muscats is the wage fixed by the Valley Fruit Growers' Association.

Apple men predict that the opening of the Watsonville apple season will be about two weeks later than usual.

Turlock district of Stanislaus County is showing some damage to watermelon crop from nematodes and wilt.

Watsonville, Santa Cruz County, is shipping seven or eight cars of fresh fruit daily, principally apricots and berries.

Alfalfa growers of Central California are discussing community warehouses in the principal hay growing districts.

The California Associated Raisin Company warns growers that high quality raisins can not be dried on dirty trays.

Grape growers who wish wire for grape vine trellis are compelled to sign affidavits as to purpose for which wire is to be used.

Central and Coast counties cattlemen recently met at Salinas and 100 members were added to the California State Cattlemen's Association.

Owing to shortage of water the condition of tomato crops in the Santa Clara Valley is critical. Because of the large acreage planted the yield will probably be equal to last year's.

Grain growers of the valley are complaining to the food administration that the poor quality of sacks furnished them is causing much loss of grain.

Many new members have been added to the California Alfalfa Growers' Association and the San Joaquin Valley Milk Producers' Association by the recent campaign in Merced County.

Southern California

October 4 will he Santa Barbara day at the Ventura County fair.

Summer blight and root knot of tomatoes are prevalent in many sections.

One acre of early grapes in the Coachella Valley netted this year $499.50.

The Palo Verde Valley, Riverside County, is now assured a cotton seed oil mill.

The Camarillo farm bureau has decided on a $3.00 a day wage for bean harvesters.

Some damage is reported to Lima bean crop in Orange County from the recent hot weather.

The California Lima Bean Growers' Association is now handling other varieties of beans.

Palo Verde Valley will hold a rodeo sometime early in November. It will be a three day event.

The Orange County Fruit Exchange estimates the coming year's citrus crop worth $5,000,000.

The Lankershim Laconic announces practically all dried apricots in that section sold at $80 a ton.

Ventura County walnut and bean growers are combining to secure adequate help in harvesting.

Estimates place the walnut crop of the Lankershim district of Los Angeles County at 125 tons.

Orange County reports some Blackeyes already ripe and Limas ready to cut within a week or two.

A new lemon growers' exchange is being organized in Ventura County with packing house at Hueneme.

Several high schools throughout the state are adding courses in tractor management to their curriculums.

The Coachella Date Growers' Association has rented a packing house and will take care of dates of members.

Bean growers of Sawtelle and Inglewood are discussing advisability of joining the Lima Bean Growers' Association.

The date growers of Coachella Valley met recently and discussed the advisability of estahlishing a central date packing house.

Federal farm help specialists are investigating as to the labor situation in the cotton fields of Imperial and Riverside Counties.

Cotton growers in the Palo Verde Valley in Riverside County are planning to establish a cooperative cotton seed oil mill at Blythe.

The Colorado River has resumed normal flow, and the Imperial Valley irrigators have suffered less from water shortage than last year.

The South Coast Honey Producers' Exchange has been incorporated by bee men of Ventura County. It will cooperate with the California Honey Producers' Exchange.

The La Habra farm center recently was favored with lantern slide lecture by Prof. Quayle of the citrus experiment station, "Citrus Culture in the Mediterranean Countries, Illustrated."

An infestation of grasshoppers which appeared at Summit in San Bernardino County was summarily dealt with by the county farm bureaus. The infested areas were sprayed with burning distillate.

The Coast and General

Rains last week in Arizona will help out the range feed.

Northern Arizona reports range cattle in splendid condition.

Oregon's pear harvest is beginning two weeks earlier than usual.

Yields of barley and oats in Oregon are not up to expectation.

Australia has only one beet sugar factory; it is located in Victoria.

Utah and Nevada stock ranges are showing the effect of the dry weather.

The Red Cross is providing for relief of destitute Greeks in the Saloniki section.

Picking of short staple cotton will begin in Yuma County, Arizona, the first of September.

The government has taken over all telephone and telegraph systems in the United States.

Glendale, Arizona, has shipped out 838 carloads of cantaloupes this season. Mesa shipped 335 cars.

Secretary MacAdoo announces that the Fourth Liherty Loan campaign will commence Septemher 28.

New Mexico has prospects for a very large cantaloupe crop. The first carload was sent from Las Cruces on August 2.

Florida growers state that they are now paying 30 cents apiece for orange crates that formerly sold for 11 and 12 cents.

British Columhia reports unusually heavy June drop of apples, which resulted in part at least from severe frost on May 24.

Hutchinson County, Kansas, has organized a dandelion campaign and is paying 50 cents per bushel for dandelion tops and roots.

The United States government is encouraging cleaner beans and has taken over supervision of some of the plants in California.

Canyon County, Idaho, will produce over 2,000,000 bushels of wheat this year, which is vastly over production of any preceding year.

Nevada reports "Irrigation water getting low; grains have passed danger point; wheat, harley and rye ripening in fine condition."

Walla Walla, Washington, has shipped ahout half its onion crop, which is 15 per cent under normal. The total crop is estimated at 200 carloads.

An association has been formed in Spain, known as the Spanish-American Wool Association, which proposes to deal largely in wools of Argentina.

Washington, Oregon and Northern Idaho report a general rainfall near the end of July which saved the crops and reduced the temperature of a severe hot spell.

Kansas farmers have been urging larger planting of barley and have turned their farms in part over to tenants on shares, seed furnished, one-fourth of crop returned.

Several plants for the manufacture of dried milk have been established in New Zealand. It is claimed that it is very much more profitahle than either butter or cheese making.

At the recent meeting in Seattle of various cranberry growing associations crop estimates indicated that the 1918 yield would be at least double that of 1917. Growers expect to start picking about September 1.

Horse a Factor in Tent Pulling in Fumigation

By R. S. Woglum and E. L. Prizer,
U. S. Department of Agriculture

THE covering of trees with tents in orchard fumigation forms the most laborious part of this strenuous practice. In the earliest days of fumigation in California cumbersome apparatus mounted on wagons was employed for tenting large trees, and the treatment of a few trees a night was considered satisfactory. With the advent of the sheet tent tree covering was greatly simplified, and the perfection attained through years of experience has developed outfits which have been known to handle 60 tents in 45 minutes, although an hour is the usual duration for throwing an entire set.

The manipulation of small tents during dry weather is accomplished without great effort, but operations conducted with 18 and 20 foot poles on large trees during humid weather are a constant heavy strain on the tent pullers. In fact two tent pullers can manipulate tents up to 41 or 43 foot sizes without much difficulty during dry weather or even 45 foot tents on small trees. The covering of trees requiring 45 to 54 foot tents usually necessitates the use of four, and under humid conditions which render the cloth damp sometimes, six tent-pullers. This large number of men on an outfit greatly increases the cost of operation and therefore is a feature in itself of considerable importance, especially where competition occurs. Furthermore, fumigation of trees that are difficult to cover presents an even more important consideration at the present time in its effect on retaining tent pullers.

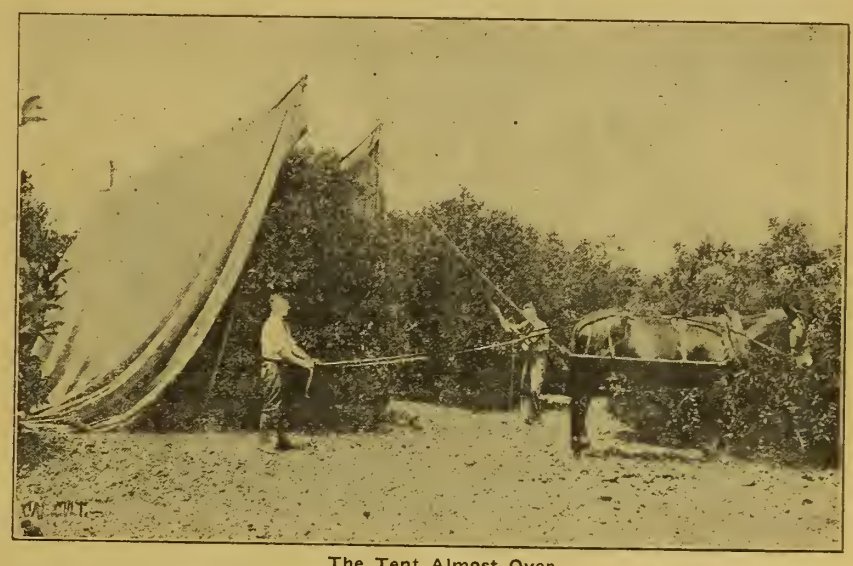
Saving Man-power in Fumigation
Starting to raise the tent.

The manipulation of large tents with long poles over a period of 8 to 12 hours is no easy task even with four seasoned tent pullers and dry tents. On nights of continued high humidity which renders the cloth damp, the greatly increased weight of the tents and friction with the tree renders the operation exceedingly laborious. Unseasoned men frequently either can not or will not endure the strain, and the result is changes in personnel at inopportune times. In a practice of limited season, of high operating cost and affected by weather conditions, as is fumigation, it is essential that the outfit keep operating continually during favorable weather. The quitting of a tent puller or two might tie up the whole outfit, and its recurrence result in demoralization of the entire crew. At the present time of labor scarcity, especially of men of powerful physique, suggestions that offer even partial relief in lightening the burden of tent pulling and thereby continuing the employment of a crew throughout the season should prove of value.

Max Thoma, of the San Diego Land Corporation, after experiencing difficulty last season in retaining fumigation labor, worked out a method of utilizing horsepower to assist in throwing fumigation tents. The apparent success of this new method at Chula Vista during the past season and its possible value to fumigators generally during the present period of labor shortage has led the writers to exploit this innovation in order to familiarize others with the details of its operation. Accordingly a harness has been constructed after the same general pattern as that used by Mr. Thoma, but modified in a few details, and practice tests in tent pulling by horsepower have been conducted at Alhambra and Whittier. Demonstrations are now being given before fumigators in other districts.

The harness and steps in operation are produced in the accompanying photographs. As practiced with 16 foot poles, one man drives the horse and directs the pole which is operated by a rope running from the top to a ring on the iron breeching. A tent puller manipulates the other pole. When both poles are raised at an angle sufficient for the points to stick into the ground the horse starts pulling, and thereafter the main effort of the puller is to direct the tent. After some experience tree covering should be accomplished easily and accurately. The covering of trees with 20 foot poles requires more than two men.

A horse of quiet disposition is best suited to this procedure, and with proper training such an animal should require little guiding. The fact that fumigation is slowed up slightly while the crew and horse are learning the method may deter some from trying it. In this respect a notable feature to consider is that its economic value even for medium sized trees has already been proven by an experienced fumigator. Furthermore, horse power for covering large trees during the early morning hours is sure to be appreciated by most tent pullers.



The Tent Almost Over

See Mr. Woglum's article regarding details of labor saving in fumigation. Photos by courtesy of United States Department of Agriculture.

The Grange as an Educational Factor

Written for California Cultivator by Frank L. Hunt,
Master California State Grange

THERE never has been a time in the history of the nation when organization was needed among our farmers more than now. Everyone recognizes the absolute necessity of the farmers getting together and staying together if they expect to maintain their rightful position in the face of so many other organizations and combinations as they are brought in contact with at every turn. No class of people recognize this fact more fully than those that make up the membership of the Grange; and it is because of this recognition that the Grange has for over a half century been using its best endeavors to instill the idea in the minds of the farmers generally.

To one who is in constant association with this great order and thereby recognizes its value, it seems almost incredible that comparatively so few of our farmers realize what the organization has been doing and is doing along these lines. Perhaps this can be accounted for in California, to some extent at least, from the fact that the Grange is so much stronger and is getting so much greater results in the Eastern states than it is in this state, that those not in close touch with the work fail to recognize its value.

With this thought in mind it might not come amiss to call attention to this great organization from three different standpoints; namely, the Grange as a big educational concern, the Grange as a big legislative concern and the Grange as a big business concern. In order to consider the Grange along these lines, it will be necessary to divide this article into different sections and even then deal with the subject only in a very limited way.

First, consider the Grange as an educational factor from a numerical standpoint. When I say that the Grange has nearly a million members and that these members are scattered over 33 states of the Union, please remember that this membership applies with just as great force along legislative and business lines as it does along educational lines.

Everywhere in our ritualistic work and always in our meetings, one of the first thoughts that is given us is the motto that we have stood for for so many years: educate and elevate the American farmer. We believe now as we have always believed, that farming will never be what it was intended to be till the farmer is educated. To be a really successful farmer, just as good an education is required as to teach school or as is needed for any other profession. Indeed the education that it requires to be the right kind of a farmer must be broader and deeper than that for a school teacher, because the teacher is only expected to teach along certain lines while the farmer should have a knowledge along many lines. He must be a good business man and he must be able to adapt himself to everchanging conditions. No two seasons are alike in California. Farming one year must be done very differently from the way it can be done the next year. So the farmer must be able to judge these different conditions and work his farm according to the season. But I must not pursue this line of thought further.

One of the Grange's greatest achievments along the educational line was accomplished when the department of agriculture was established. It is not generally known that it was through the direct influence of the Grange that the department of agriculture was brought into existence and placed on a level with the other cabinet offices. Consider what a great influence this office has had and is having on the agricultural situation of the United States. Think of all the experiment stations, of the attention that is being paid to agriculture in our colleges,

Continued on Page 156

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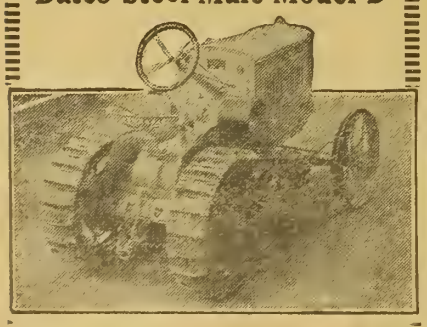

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Fruit Inspection Situation

SOME shippers have seemed to throw the fruit standardization regulations to the winds and have dumped immense quantities of low grade fruit on the market, especially in San Francisco. The state horticultural commission and several of the county commissions have taken a hand and in a measure at least have secured cooperation on the part of grower and shipper. The state horticultural commission says:

There is a certain element of packers and shippers who simply cannot be brought to recognize their responsibility except by drastic methods. California cannot allow the reputation which has been built up by great effort to be dragged down by this element. If condemnation is the only means which will bring home to them a sense of their obligations, it then becomes necessary to proceed in this manner. Fruit packers who expect the state to stand back of their products must be prepared to make an honest endeavor to pack in accordance with regulations. The better element both among independent growers and the associations is behind any movement for better fruit, and this office is in receipt of sufficient representations to this effect to know just how things stand in this regard. As an example the following letter signed by Frank Swett, manager of the Pear Growers' Association, is quoted:

"This morning the wharf is piled up with inferior pears, many of which are unfit for human consumption, and sacrifices will have to be made for moving the accumulation.

"A close examination of the thousands of boxes on hand show that the growers, or their tenants, have been putting everything in the way of windfalls and wormy pears into the boxes, mixed in with the good windfalls, and with the good No. 2 pears. This morning I personally inspected every shipment on the wharves.

"How does it work out? Last week when only 300 to 400 boxes a day were coming in, the retailers bought such pears, took them to their stores or peddling wagons, sorted them over, threw away the wilted, the wormy and the rotting pears, and laid aside the good 50 per cent of the pears to ripen up. They bought because there was nothing else to buy.

"Now they have enough for their immediate wants, and will not buy the mixtures of trash and good pears. Over 2000 boxes a day are coming in. Therefore, the grower, if he permits his help to do as they have been accustomed to do for years, and throw into the boxes all the refuse pears is bound to lose.

"The growers on the river will save, on the estimated tonnage of 3000 tons of windfalls, if they will sort them over and send only the good ones down to this market, at least $7000. What's the use of paying charges and using boxes to transport something to market that not only brings you nothing, but costs you $5.00 to $7.00 a ton loss?

"Let's all get busy in providing a better grade of windfalls and No. 2 pears for this market. Consumers will buy them at a good price if the rotten, wilted and wormy trash can be kept out of the boxes. Consumers will be better off and the growers will get a decent return for respectable fruit.

"If this association can succeed in raising the standard of the windfall and No. 2 shipments so that purchasers are not afraid to buy, it will have performed a service to the growers and the general public that is well worth while.

"Talk it over with your neighbors, and show your own help that everybody all along the line loses when good and bad fruit are shipped in the same boxes."

Deputy State Commissioner Weldon, accompanied by commissioners from several counties around the bay, recently made a two day inspection of conditions in the San Francisco market. Several thousand boxes of pears were condemned; apples were found to be in much better condition; tomatoes were in exceedingly poor condition, as were strawberries, peaches and other fruits. The same general condition obtained in Oakland.

Florida Free of Citrus Canker

FLORIDA has been freed from the terrible citrus canker after three years of strenuous fighting. The Cultivator has given in detail the methods used in eradication; isolation of groves, burning of all infected trees, root and branch, drastic disinfection of all tools and clothing entering infected groves, etc.

The work was done by federal and state authorities working in cooperation. The federal bureau of plant industry now announces that the campaign has been successful in Florida—it is free of citrus canker.

In the other states concerned the work is somewhat complicated by the rather general practice of mixed plantings of susceptible and somewhat resistant types of citrus trees. In South Carolina, however, it has progressed so satisfactorily that it is unlikely that further work will be required during the coming year, while in Alabama, Texas, Louisiana, Mississippi and Georgia a longer time will undoubtedly be necessary.

The citrus canker campaign is unique in character, in that it is the first instance of the use of federal funds appropriated specifically for the eradication of a plant disease. It is of overwhelming importance to the citrus industry, because citrus canker has been recognized as the most contagious of all known plant diseases and the most destructive of commercial values.

When the disease was first recognized as a new one, an immediate and rapid inspection of the Gulf region by an agent of the federal horticultural board of the United States department of agriculture, supplemented by reports from state officials, indicated the occurrence of infected citrus trees in more or less widely separated and sharply defined localities from Southeastern Florida to Southern Texas.

In outlining plans for the eradication of citrus canker emphasis has been placed upon the magnitude of the undertaking because of the extreme infectiousness of the disease and the wide area throughout which it has been disseminated. Owners of citrus groves were advised that whenever symptoms indicating this disease appeared, they should take all possible precautions to avoid its spread, prohibit all visiting to the grove affected or those adjacent, stop all cultivating or other work, and send for a state specialist to determine definitely the disease.

The cooperative work of inspecting citrus groves and nurseries and destroying infected trees was begun in Florida immediately upon the approval of the urgent deficiency act of January 25, 1915, and shortly afterwards cooperative agreements for similar work were made with Alabama, Texas, Louisiana, Mississippi, Georgia and South Carolina.

ASSOCIATION GIVES NOTICE TO PACKERS

The California Prune and Apricot Growers' Association is calling attention of packers to a ruling of the food administration which provides that before soliciting contracts for the sale of food products an agent must first ascertain whether or not the grower has previously contracted for the sale of his fruit to any other person. Since a number of the packing institutions have attempted the purchase of fruit from our members, even with a full knowledge of their membership, the association has recently furnished all packers with formal notice of the above rule. As the violation of this rule might lead to revocation of their food administration licenses, several growers have recently reported their desire to sell green fruit to other than association members.

All growers should understand that in case of any sale of green fruit the association will not furnish a regular approval except in case of sales to members, or for legitimate green shipping or canning purposes. If the grower is going to sell to anyone without the association, he must protect himself and insure the fulfillment of his contract with the association by placing the responsibility of said contract on the purchaser. In case of any failure to deliver, the association will be holding the grower responsible, and he can only clear himself by in turn properly and legally holding purchaser responsible.

AVOCADO PROSPECTS GOOD

Avocado prospects, according to report in the Los Angeles County Farm Bureau Monthly for August, are good. The report says:

"Last year was a very bad one for the avocado grower for, in common with citrus trees, the crop quite largely fell off as a result of the heat wave. In addition, severe burning occurred on many of the avocado trees. However, as was the case with citrus. avocado trees bloomed very heavily this season and set a heavy crop. Although a considerable fall of fruits is now occurring, worse in some sections than in others, the prospects are for the largest crop ever. For the first time probably, there will be enough fruit on the local market this fall to make a showing. Quite a number of Fuerte and Puebla trees will come into bearing this season and the indications are that the Knight varieties will show their fruiting quality for the first time."

SCALY BARK DEMONSTRATION

On August 27 the Monrovia-Arcadia center will have a scaly bark demonstration conducted by Assistant Farm Adviser Hodgson. Demonstration will be given in the groves of J. W. Blain and Director Petersen.

From reports received at the office of the state horticultural commission, it would seem that a considerable portion of the orange crop in the Sacramento Valley has dropped as a result of the hot wave in June. In some cases it has been definitely stated that the loss from this cause will run as high as 90 per cent.

New Grading of Nursery Trees

At a recent meeting of representative nurserymen of the state at San Francisco, there came up for consideration the matter of grading trees by caliper specifications instead of by tree length. Two years ago the nurserymen adopted specifications of four to six foot, three to four foot and two to three foot lengths, each length with minimum specified caliper. According to these specifications the length was the determining factor and was given the precedence, but, as a matter of fact, in determining the grade of a tree, the caliper, stockiness and root development are of greater importance than the length of the tree and should be given the precedence over length in determining the grade of the tree, so in order to adopt specifications that would determine more clearly the true grade of the tree, they deemed it advisable to give the caliper specifications the precedence, while the length of the tree is a secondary consideration. To that end the nurserymen adopted the following schedule of grades:

On all varieties of deciduous fruit trees consisting of apples, apricots, cherries, chestnuts, peaches, pears, pecans, plums, nectarines, quinces and walnuts, the caliper and height combined will determine the grade of the tree, the caliper always taking precedence. The following schedule of caliper and sizes effective on the varieties named:

Caliper not less than one inch on eight to ten foot trees.

Caliper not less than three-fourths inch on six to eight foot trees.

Caliper not less than one-half inch on four to six foot trees.

Caliper not less than three-eighths inch on three to four foot trees.

Caliper not less than one-fourth inch on two to three foot trees.

On almonds and figs, because of their inclination to grow stocky, the caliper measurement will govern the grade of the tree, regardless of height, and the following is the schedule adopted:

Almonds

Caliper not less than one-half inch represents four to six foot trees.

Caliper not less than three-eighths inch represents three to four foot trees.

Caliper not less than one-fourth inch represents two to three foot trees.

Figs

Caliper not less than five-eighths inch represents four to six foot trees.

Caliper not less than one-half inch represents three to four foot trees.

Caliper not less than three-eighths inch represents two to three foot trees.

This action on the part of the representative nurserymen of the state should overcome the irregularity of determining the grade of a tree by length, and the above schedules will more nearly determine the true character and grade of the tree and will work to the advantage of both the planter and the nurserymen.

Nitrate Delivered to Eastern Farmers

Despite the shortage of ships and two shipwrecks, farmers received 75,000 tons of nitrate of soda from Chile, bought through the war industries board and distributed by the United States department of agriculture.

The nitrate was sold and delivered under authority of the food control act which authorized the president to procure and sell nitrate of soda at cost for the purpose of increasing food production, and appropriated $10,000,000 for this purpose. The war industries board was designated by the president to make arrangements for the purchase of the nitrate and the secretary of agriculture was charged with its sale and distribution. The nitrate was sold at $75.50 a ton at Eastern ports, its cost as nearly as it could be determined in advance. Applications for more than 120,000 tons, the total amount purchased in Chile, were received by the department in February, 1918. On account of shortage of available shipping it was possible to bring in only 75,000 tons, leaving on hand in Chile between 35,000 and 40,000 tons. Ships have just been assigned by the shipping board for the transportation to this country of the remainder of the nitrate contracted for last year which, of course, can not be used this season.

No announcement can be made at this time as to whether nitrate will be offered for sale to farmers next year. The question of procuring nitrate for agricultural purposes is closely connected with the demand for nitrate for munitions and with the availability of tonnage for bringing in the nitrate. It has been intimated to the department by the war industrial board and the war department that the need for nitrate for munitions is such that it is doubtful whether it will be possible to import any next year for use as fertilizer.

Tractor Demonstration

For five days, commencing Saturday, September 17, there will be a big tractor demonstration held on the Whittier boulevard one-half mile east of the Los Angeles city limits. And a tractor demonstration draws a crowd like a movie outfit taking pictures. The crowd doesn't come out of curiosity either; it comes because it is vitally interested in tractors and the work that tractors are doing and can do for them. From the giant field type to the orchard tractor that can make a sharp turn under an orchard tree, they will all be there in force, plowing and cultivating on a big tract where everybody can see just how they act under practical conditions. More than 40 types of tractors will be exhibited, with attendants to explain and demonstrate for the full five days.

Also there will be many huge tents containing display of implements, trucks and accessories. There is always something new in this line, something a little better, more economical and more practical. Produce and conserve are the watchwords in every endeavor during these strenuous days, and in no way can one better put them into practical demonstration than by employing up-to-date labor savers — and that is what the modern tractor and implements are.

There are now more than 100,000 tractors in use on farms of the United States; thousands have been sent from our factories to the fields of England and France to serve, as the tractors in this country are serving, in the second line of defense, on the farms that send up food to the front line where the fighting is being done, while supplying food to all the forces which stand behind.

Never did the tractor mean so much to the world at large; never did it mean so much to you personally. Then be sure to see the demonstration this coming week near Los Angeles. It is in charge of the California Tractor Engine and Implement Dealers' Association. Ten thousand automobiles can be parked inside the demonstration field, free parking, of course. Admission to the grounds is also absolutely free. Remember the dates, September 17-21, and come early.

FARMERS CALLED TOGETHER

Victory must come from the soil. Food and men will win the war. The soil supplies both.

The federal board of farm organizations hereby calls upon the farmers of the United States to assemble in person or by their representatives, in the city of Washington, August 27, 28 and 29, 1918, there to take such action as will best promote the production of farm crops in 1919: sufficient, first, to supply our own people, our allies and the neutrals who depend upon us, and, second, to replenish our national reserves of grain, live stock and dairy products, now depleted to a point where a single short crop will threaten us with famine.

America's acres can and must win the war.

USE PAPER TRAYS FIRST

The following bit of sensible advice is passed on to growers by the Raisin Association:

Many growers who have not sufficient trays for their needs start picking on wooden trays, sometimes in the hope that there may be enough to go around. If a grower thinks he has not enough wooden trays for his crop he should make arrangements, if possible, to buy or rent some more. If this isn't possible he should get paper trays without delay and pick the first grapes — not the last — on paper, so that there will be the minimum of danger from the rain.

$1,000,000 FOR FIGHTING FOREST FIRES

The president has authorized the loan of one million dollars to the forest service for fire fighting expenses. The loan became effective on July 27, and was made from the special emergency fund placed in his hands by congress. The necessity for this action, according to the forester, was made imperative by the unusual severity of the present fire season, coupled with the fact that congress had adjourned without passing the regular agricultural appropriation bill.

BELGIUM

Belgium, the land of von Mons, and the Abbe Hardenpont, those great fruit raisers of a hundred years ago; the land of fruit and horticulture before the war, is indeed now a land of devastation and desolation. In a letter telling of his experiences there, P. Val Kerr, a well known orchardist of Tyabb, Victoria, and formerly assistant at the School of Horticulture, Burnley, says in the Fruit World of Australasia: "I have seen a good deal of Belgium (far too much in some ways), but I can't say that I've seen much of Belgian horticulture. All I've seen of that country is barren, desolate, shell-torn country — a terrible sight when one thinks of its late position in the horticultural world."

The man who refuses to do an honest day's work for an honest day's pay, especially in war time, is a traitor to his country. The man who only makes a bluff at working is worse than the ordinary vagrant, for the latter doesn't collect any pay for doing nothing.

To secure quicker and more even curing of the raisins, the trays should be sloped toward the south to receive more directly the rays of the sun.

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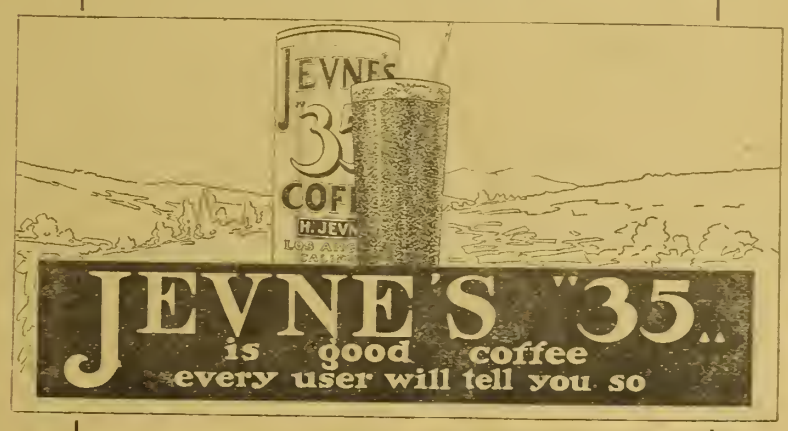

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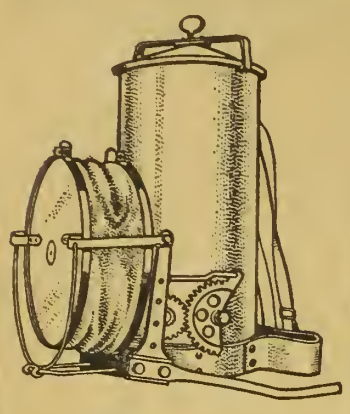

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Truck Crop Production in the Delta of the San Joaquin and Sacramento

By R. G. Risser, Assistant Truck Crop Specialist

CROP production in the reclaimed lands of the delta of the San Joaquin and Sacramento Rivers of California is not confined to a few crops or a single type of farming. Beans, corn, potatoes, barley, oats, hemp, vegetable seed crops, pears, and other crops are important products of this productive district. At the same time it is one of the most extensive producers of certain kinds of truck crops in the United States. In the peaty soils of the San Joaquin reclamations one of America's leading onion districts is located. In the slightly heavier solls on these rivers one of the foremost celery districts has been established, and on the sediment soils of the Sacramento River the largest asparagus district in the United States is to be found. The onion crop is used largely for storage and partially for shlpment and immediate consumption. The celery crop is used for winter shipment. The asparagus crop is used principally for canning but also for shipment to Eastern markets in the fresh state and in a limited way for Pacific Coast consumption. In a practical combination of intensive methods of farming these truck crops are grown with good yields and the work is done on a large scale. Various means of reducing the labor cost have been put into general operation. Plowing with large traction outfits ls extensively done. Ditching with machines especially designed for this district is generally practiced. Drainage by large electrically operated pumps is the rule, and hauling by river barges and steam boats is the customary means of transportation. Yet labor is the factor which is the limiting element in the truck crop industry of this district under present conditions. No machines have been found adapted to the weeding of onions, the weeding and transplanting of celery, or the field cutting of asparagus. The work must continue to be done by hand labor unless some genius can devise a successful substitute, and no such possibility seems feasible just now. The labor situation in this district has been growing more serious every year in the past few years until it has reached a stage which is extremely critical. Wages have been advanced frequently, all kinds of concessions have been made to workers and employers have been compelled to accept any kind of workmanship available regardless of efficiency and without remonstrance of any kind. The shortage of satisfactory labor in thls district has, lndeed, been so acute that it has discouraged the farmers and is resulting in a change of policy regarding farming systems. The loss of asparagus due to cutters, the waste which occurred in the canneries and the loss in quality through improper handling was excessive. The reduction in the acreage of celery has been another result, and the abandonment of weedy onion fields was also caused by the labor situation. Last season there was difficulty also in handling the onion crop and the general movement occurred late, but the unusually late fall with weather hlghly favorable for harvest cannot be expected this year again, and the prospects of handling the crop is in doubt. Wages are not the only question, although they have multiplied productlon costs and cut profits to a doubtful margin, but there is so much independence that workers will not accept instruction, not to mention discipline. In splte of these labor difficulties the celery transplanting has proceeded in prompt fashion.

Field setting of the reduced acreage is well under way and will be finished by August first, which is slightly ahead of normal. The acreage for the delta districts of the counties is as follows: Contra Costa County, 1916-7, 1605; 1917-8, 2075; 1918-9, 1100. Sacramento County, 1916-7, 995; 1917-8, 967; 1918-9, 805. San Joaquin County, 1916-7, 655; 1917-8, 840; 1918-9, 165. Total for 1916-7, 3255; 1917-8, 3882; 1918-9, 2070.

The average yields of stock shipped in the past three seasons as shown by records of extensive areas was as follows: 1915-6, 130 crates; 1916-7, 79 crates; 1917-8, 134 crates.

If the entire acreage had been acceptable for shipment under existing market and transportation conditions the yield would have been slightly higher as some of the less desirable stock remained in the field at the end of the season. However, the season was highly satisfactory from the view point of ylelds as there were no severe freezes like the ones which occurred the previous year. With a larger acreage than ever before and an exceedingly mild winter, the production broke all records. It was only from the vlewpoint of returns that the situation was not entirely satisfactory. Retarded movement of the cars East caused by terminal congestion and other transportation difficulties resulted in deterioration of the product in transit and poor condition upon arrival. The quality of the pro duct was impaired and the market demand was weaker than usual. Altogether conditions were decidedly unfavorable for high prices. The first car of celery is usually shipped from the Delta district the middle or latter part of October, the first car last year going out on October 22. Heavy shipments East are made early ln November for the Thanksgiving trade and December shipments are also heavy. The first part of the season the stock is tall and heavy. Foliage is green and the product has good carrying quality. Sizes usually run large. During the latter part of the season production is more uncertain and sizes are smaller, but these things depend upon weather conditions and are materially affected by repeated freezes. The regular load was formerly 160 crates per car, but as the season advanced the load was increased to 180 crates. Somewhat heavier loading is now practiced throughout the season and it is estimated that the average number of crates per car is 175. These crates have a base of 22 by 24 inches. The helght ls 18, 20, 22 or 24 inches, accordlng to the length of the celery. The average height is probably 20 inches. The varlety used is Golden Self Blanching, which is blanched and partially protected from freezes by being banked with soil. The largest shipping points are Antloch and Walnut Grove. The acreage of onions in the Delta is estimated as follows: San Joaquln County, 1917, 5935; 1918, 7765. Contra Costa County, 1917, 2133; 1918, 1439. Total, 1917, 8068; 1918, 9204.

Much of the product of last year's acreage was shipped to the cities in boats and stored in warehouses where there was loss from deterioration. Much was grown for seedmen who used the bulbs for planting. For this reason railroad records are not a true criterion of production in this district. The average yield varies with seasons, usually runnlng close to 225 to 250 sacks per acre, each sack weighlng 105 pounds. Shipments are made in cars, the usual load formerly being 300 sacks. Since provisions have been made for heavier loading, the average probably runs closer to 375 sacks per car. The main varieties are Australian Brown and Buck Skin, but other varieties are also grown particularly for the seedmen. A later report will be made of the onion outlook and asparagus production will be considered separately.

Tomato Blight

WE HAVE a recollection of havlng seen a publication, we think issued by the United States department of agriculture, in which method of treating summer blight, or wilt, of tomatoes through the soil was given. More specifically, if we remember rightly, sulphate of copper was used in varying degrees of strength, some showing no effect; stronger, slight effect in preventing disease; still stronger, death of the plant. The idea of the treatment was that fusarium present in the soil was destroyed before it secured entrance into the plant. However, regardless of our recollection of this bulletin, we have the following from a subscrlber at Potrero, San Diego County:

I noticed an article in the July 20th number from Subscriber, Redlands, asking what to do for tomato blight. I will tell what we have learned from experience. Take one heaping tablespoon of bluestone; dissolve in six quarts of water. Make a ring, say three inches deep and four or five inches from plant around root and fill in with solution and when soaked into ground cover with soil. If not too far gone plants will recover.

I have treated healthy plants ln this manner and have not lost any after they were treated. I do not measure the bluestone but I think that is about the right proportion.

I once tried putting the bluestone around without being dissolved. I scattered a good quantity around roots and then irrigated them. It had a queer effect on the vines. There would be a streak on one side of vines from ground to almost top and on some of the branches that looked like a frost had struck it. However, my vines did not die and I lost no more from blight. We have raised tomatoes on the same ground for years, only moving them a few feet each year, without a case of blight for years. Before we learned about the bluestone we were greatly troubled, some years losing almost all our vines. Care should be taken not to have the solution too strong.—E. R. M.

AUGUST SCHEDULE OF GLENN COUNTY FARM BUREAU

Twelfth, Willows, nlght meetlng; 13 and 14, Orland, night meetlng; 15 and 16, Plaza, night meetlng; 21, Chrome, nlght meeting; 23, Larkin, night meeting; 24, dlrectors' meeting at Willows at 10 a. m.; 28, Elk Creek, day meeting, 2 p. m.; Grapevine, night meeting.

Tomato Troubles

Every year at this time the mail brings to the Cultivator office many queries as to what to do to save tomato plants that show signs of dying out. Unfortunately there isn't much that can be done. The Los Angeles County farm bureau in answering similar questions has this to say as to root knot and summer blight:

Root Knot

Frequently when tomatoes are grown on sandy soils the vines suddenly turn yellow, growth stops and they slowly die. No unnatural spots are seen on the leaves but on digging up the affected vines the root system will be found largely rotted away with only a few swollen and distorted roots remaining. This condition is caused by the nematode worm. These worms are so small as to be hardly visible by the naked eye. They get into the roots from the soil and produce the gall or swelling which results in the decay of the roots.

The control of nematode worms is often difficult. There is nothing to do for affected plants except to pull them up and remove from the field. It is hardly worth while to put new plants in the vacant places as they are likely to become infested. Rotation of crops in such a way as to have corn, sorghum, barley, etc., upon which the worms do not feed, occupy the land for several years will starve them out.

It is particularly important to see that the seed bed is free from these worms for it often happens that plants becoming infected in the seed bed before removal to the field will result in large losses.

Summer Blight

The amount of this disease varies greatly from year to year. It is common throughout the coast districts of California. Some seasons the losses are enormous. Last season the loss was relatively small. It is characterized by the dying of individual plants throughout the field. Affected plants show a purplish color on the veins on the under side of the leaves. The leaves curl in the latter stages.

This season's losses are quite severe and it is with great regret that it is necessary to state that no cure is known.

To the Farmers of America:

The men who till the soil are whole heartedly behind the government to win the war. None have shown themselves more ready to do their utmost. The volunteers they have supplied, the money they have given and the wonderful crops they have produced, crops greater in proportion to the number of farm workers than the world has ever seen before, prove that beyond dispute. None are more determined to leave nothing undone that will help to bring victory. With them the great question is how they can serve best. Without doubt their first duty is to supply food without which victory is impossible.

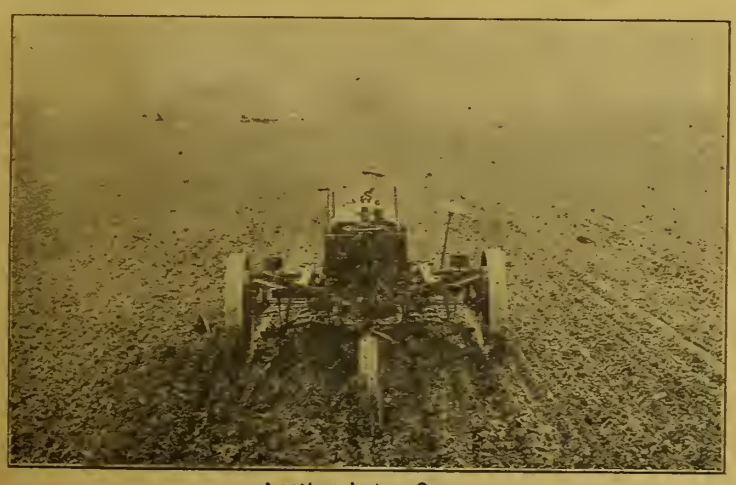
With this fact in mind the federal board of farm organizations hereby calls upon the farmers of the United States to assemble in person or by their representatives in the city of Washington, August 27, 28 and 29, 1918, there to consider, decide upon and take such action as will best promote the production of farm crops in 1919; sufficient, first, to supply our own people, our allies and the neutrals who depend upon us, and second, to replenish our national reserves of grain, live stock and dairy products, now depleted to a point where a single short crop will threaten us with famine.

Farm and Home Drying of Fruits and Vegetables

The bureau of plant industry United States department of agriculture has issued Farmers' Bulletin 984, "Farm and Home Drying of Fruits and Vegetables," by Joseph S. Caldwell. Imperative necessity demands nation wide conservation of those portions of our food crops which have heretofore been permitted to go to waste. A considerable portion of this wasted food material is made up of perishable fruits and vegetables produced in home gardens and fruit plats in excess of the immediate needs of the producers and in the absence of accessible markets for the surplus drying offers a simple, convenient and economical method for preserving food materials and permits the carrying over of the surplus into periods in which fresh fruits and vegetables are expensive or unobtainable.

The bulletin may be had without cost by writing Division of Publications, United States Department of Agriculture, Washington, D. C.

All private stocks of olive oil in Italy in excess of actual family needs have been requisitioned by the government.



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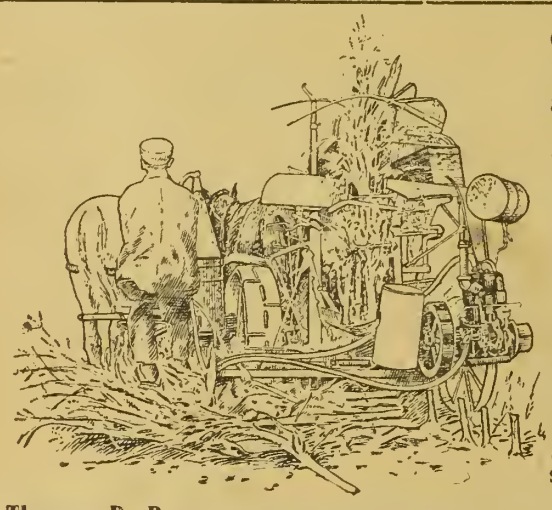

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Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Rhodes Grass

Somewhere I have heard of a kind of pasture grass called Rhodes grass. Could you tell me where it can be grown and where I can get the seed? I have some low ground that will not raise alfalfa. I wish to use the land for pasture. Would this grass be what I am looking for?—Subscriber, Bakersfield.

Rhodes grass has been tried and has succeeded well in South Africa where it originated. It was planted there quite generally by the late Cecil Rhoades. The Cyclopedia of American Agriculture says: "The grass has done well there, forming heavy sods of good herbage. It does not seem to be drouth resistant, at least, it is not able to withstand very severe weather." Its trial in California has been very limited. It seems to find the summers are very trying.

Ducklings Have Indigestion

I have 125 White Muscovy ducks, just beginning to feather out. Every day or two one or two get apparently dizzy and stagger around, sometimes falling on their backs and cannot get up. I have lost 10 or 12 in this way. They have good appetites and eat when they cannot stand up. At first I thought it was the heat during the day and cold nights. They have a good shade. I feed stale bread, bran, plenty greens and a little Surelay. Can you tell me what is the trouble?—Subscriber, Galt.

Your ducklings are dying from indigestion. It may be they are chilled at night, but more probably the trouble is in the ration. I am not told whether the bran is fed dry or is moistened with water. Ducklings always do better on a wet mash, and the mash should contain not only ground and cut-up greens, but a good handful of sand. A good ration for ducklings this age is: Equal parts bran and corn meal, moistened with water till it is crumbly, with about 20 per cent cut-up alfalfa or other greens added, and the sand, which should never be omitted. Just what the preparation called "Surelay" contains I do not know, but its name would indicate that it is a food for laying hens rather than for ducklings. A very little beef scrap may be added to the mash if you wish to hasten growth, and the amount may be gradually increased till it is ten per cent of the mash, but ducklings do very well without it, and it is expensive.—J. A. K.

Hogs per Acre

I notice in your number of August 3 an answer to a question entitled "Hogs per Acre," stating that 15 pounds of green alfalfa will make one pound of pork. I think this must be a mistake because if this were so 15 pounds of green alfalfa would equal four pounds of corn and I could get five times as much for feeding the green alfalfa as I could get by selling it. If you can tell me how to get one pound of pork from 15 pounds of green alfalfa I would like to have you do it. Can you tell me what the feeding value of red yams is in pork production?—Subscriber.

We rather think Mr. Hull has the best of the argument, but, as we noted in the query "Hogs per Acre" on Page 106 of the issue of August 3; "Here are some figures given in 'Swine in America' by Coburn, and we have verified the statements by noting on Page 161 a table giving comparative values for pork production of one acre planted to green alfalfa and to various grains, which is based on the supposition: "If a comparative basis be taken of four pounds of grain or 15 pounds of green clover or alfalfa to make one pound of pork . . ." The low production per acre of ten tons of green alfalfa given in this table may be accounted for by the fact that it is pastured and not cut alfalfa, but the ratio of 15 pounds to the pound of pork is maintained in the number of pounds of pork per acre, given as 1333. We also think the figures given by Mr. Coburn, four pounds of grain to one pound of pork, are rather in error, for we have heard practical pork producers assert that it takes at least six pounds of grain to make one pound of pork.

But, returning to the question asked by the Oxnard subscriber as to number of hogs per acre, we note in another book, "Alfalfa", also by Coburn; "A Kansas farmer reports having pastured 30 pigs on one acre of alfalfa from May 1 to September 1, when they weighed 100 pounds each and were in fine condition for fattening. Another reports keeping 100 pigs from about the middle of April to September on five acres of alfalfa pasture." Also in Henry's "Feeds and Feeding": "In tests at the Iowa station by Evvard and Kennedy in which pigs were fed corn and tankage on alfalfa pasture the alfalfa produced 623 to 865 pounds of pork per acre, after deducting the gains to be credited to the concentrates fed, and without crediting the alfalfa with the hay cut from the pasture. In one trial an acre of alfalfa carried an average of over 16 spring pigs for 180 days, producing 1.05 pounds of gain per head daily."

We think that all hog feeders fully understand that the production of a pound of pork, or any other number of pounds, on green alfalfa is more economically done where, in addition to the alfalfa, there is a ration of grain or other concentrates. Here is an opportunity for our hog feeders to be helpful to each other in telling how the greatest amount of pork can be produced with least expenditure for alfalfa and concentrates.

We are unable to find data regarding feed value of yams. The digestible nutrients of the sweet potato, however, are given by Henry in "Feeds and Feeding"; dry matter, 30.2 pounds in 100 pounds of sweet potatoes. Of crude protein it contains 0.9 per cent; carbohydrates, 24.2; fat 0.2 per cent, or a total of digestible nutrients of 25.8 pounds. Compared with the sugar beet, it has nearly twice the dry matter, practically the same crude protein, nearly twice as much of carbohydrates, and three times as much fat. Bear in mind this is the ordinary sweet potato, probably higher in carbohydrates than the yam.

Linnets

Could you give any method of getting rid of the birds commonly called linnets? The state has a law, I believe, to rid it of gophers and squirrels, which is a splendid thing, and why not rid the country of these pests which destroy far more than gophers and squirrels. They are on hand during the winter to eat the fruit buds, and in the summer to take everything in the way of grain. Ourselves and several neighbors have planted milo in large quantities for poultry and I doubt if there will be any to harvest. Surely these pests should be exterminated.—Subscriber.

There are seasons when linnets are

most destructive pests. Poisoning as a rule is unsuccessful because of the vast number of beneficial birds destroyed at the same time. In fact we may say that linnets have some long marks on the right side of their ledger, but when they come in such quantities as to do a great deal of damage the farmer in self protection must get busy. The boy with a shotgun is perhaps one of the best control measures. Fluttering paper and bright tin in the trees frighten away a few. If poison has to be resorted to use water and strychnine, water three gallons, strychnine one-eighth ounce. This should be poured in shallow tin pans and placed among trees and it will destroy many of the birds.

Tomato Wilt

In the Cultivator of July 20, page 59, we answered question of Redlands subscriber as to sending of tomato plants in effect that it would be necessary to send specimen of roots of affected plants before determination of the trouble could be made. The roots were sent and forwarded by us to the citrus experiment station at Riverside, and Prof. J. T. Barrett answers:

"An examination of the root tissues did not reveal the presence of any organism. Therefore I must conclude that the plants are not infected with the fusarium wilt. However, there are two other types of wilt that have been recognized this summer on tomatoes. One of them is the so-called California wilt, the cause of which is not known but which causes the death of many plants and has been very prevalent in Los Angeles County. The other is caused by a fungus which attacks the small rootlets, causing them to decay and thus eventually killing the plant. As nearly as I could make out from the specimens submitted which were in a very dry condition, I judge that they are suffering from the California wilt. We do not know of a remedy for this trouble."

Roup

I would like to know what causes canker eye in my pullets. They are four months old and nearly every day we find one affected. I treat it with boracic acid but it is some time before they get over it. We have an up-to-date hen house on a new place and proper ventilation so I don't see what causes it. We have a dry mash in front of them always and we feed barley and corn. The barley we soak as they don't like it dry.—Subscriber, El Cajon.

The disease you call "canker eye" I take to be some form of roup, either what is known as swellhead, or roup of the eyes. It is quite contagious and would easily he passed on from pullet to pullet if the first case was not promptly isolated. As to just what the cause may be, I should have to know a little more about the environment of the birds. Assuming that the ventilation is all right, is it possible, perhaps, that you have too many pullets in one house? Two square feet of floor space is as little as Leghorns will do well with. Heavy hens require more. The location of the house plays an important part, also. If your house is in a hollow where water from adjoining land runs into the yard or the moist air from adjacent slopes settles down on and about it, you will have more trouble with roup. Sometimes too a predisposition to roup is congenital. The birds have roup because their mothers had it. If you will isolate every pullet that is in the least affected and band them so that not one is ever used as a breeder, taking care that your house and yard are always dry, I think you will soon conquer the trouble. The best treatment for the affected birds is a potassium permanganate solution. Fill a lard pail with warmish water and add a few crystals of permanganate of potash, just enough to give the water a deep purple tint. Dip the heads of the affected birds in this and hold them under a few seconds. The permanganate clears out the nasal passages and washes out the eyes. This treatment morning and night for a week will cure most cases. If the eyes are inclined to be sticky in the morning rub a little white vaseline on at night.—J. A. K.

Homemade Syrup from Sugar Beets

Could you please tell me how to make syrup from sugar beets? Also how can I tell when the beets are ready to use? — Subscriber, Spenceville.

See instructions in "Home Made Sugar" in Cultivator of March 16, 1918, Page 329. The period of ripening depends upon the time of planting, locality in which heets are grown and other factors. The sugar factory at Visalia has been runing for some time and may close its operations hefore the factory at Spreckels hegins. But for the individual here are suggestions from "Manual for Sugar Beet Growers," by Adams: "Plowing out should be delayed until the beets are ripe. Maturity will he indicated by a yellowing in the color of the leaves after the beets have been in the ground four months or more, accompanied by a slackening of growth and a ring of dead or dying leaves around the outer circle of the beet. Sometimes drying out is confused with ripening, but this occurs where the moisture conditions are unfavorable. Where this occurs the seemingly ripe characteristics will apear more or less abruptly and the root will be soft, dry and rubher-like. Mature beets are solid, hrittle, juicy and with a sweetish taste."

Lump on Hen's Face

Last November a White Leghorn hen had small lumps on her face. I first thought it was roup but upon examination found the lump very hard. This lump has grown in size till now it is much larger than the size of a pea. It is red and shiny and very hard. She will be two years old next October and has never been sick except a slight attack of rheumatism in her first year. She is an exceptionally good layer and has laid steadily during the time she has had this lump. Have a White Rock pullet developing the same kind of lump. Can this be a tumor or do you think something could have worked up through her nose and caused this lump? Is she fit to eat? or would you advise us to keep her?—Suhscriher, Redondo.

As far as I can judge from your description, the lump is a tumor of some sort, but it should not interfere with the hen's fitness for food. As she is an old hen the best thing you can do is to eat her. In the case of the pullet it might be well to try painting the lump with tincture of iodine once a day for a week or so. If the lump continues to develop, eat her also. These lumps may be the result of a rheumatic condition for which the best cure is warm, dry quarters and plenty of green feed.—J. A. K.

Nematode Root Knot on Teparies

I am enclosing roots of Tepary beans which look as if affected by wilt. Some plants showed the same trouble last year, hut it is worse this year. I cannot find any insect on the plant. Do you think Blackeyes would do better in the same land next year? —Subscriber, Manteca.

These roots were submitted to Clayton O. Smith of the Riverside experiment station and he answers that they are infected with the nematode root knot. This disease is common on many of our cultivated and wild plants. I do not have any data regarding whether it is common on the Blackeye bean, although it is reported on two other varieties of cowpeas, and probably also attacks the Blackeye bean. There is no very good control for this disease, as the worm lives over in the soil for several years. Certain plants, however, are much more resistant to this trouble, and it would be best to plant some of those crops.

Also see "Tomato Troubles" on Page 153.

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Aerate Sorghums

California has not had the trouble experienced by Eastern growers of sorghum grain, though to a degree heating is a factor in this state. The department has issued a bulletin on prevention of this trouble and it contains information which will be of much value to the sorghum grower. The bulletin may be had (without cost) by writing Division of Publications, U. S. Department of Agriculture, Washington, D. C.

The bulletin says:

"The most important groups of grain producing sorghums are kafir and milo. The grain sorghums are of comparatively recent introduction. They are now extensively grown in the southern half of the Great Plains area.

"Sorghum grain is feed for stock and food for man. It also may be used in making alcohol. The grain has about 90 per cent of the feeding value of corn. It is a profitable feed, therefore, when the price is not more than 90 per cent of the price of corn. Where the yield is ten per cent more than the yield of corn, grain sorghums are as profitable crops to grow as corn.

"Sorghum grain is relished by all stock and poultry and if of good quality is readily eaten. For human food the meal can be used in every way that corn meal is used, and the grain may be popped like popcorn.

"The thrashed grain should be thoroughly dry and as clean as possible before it is stored in bins. Broken kernels and dirt pack so closely that they exclude the air and so increase the danger of spoiling. Bins for sorghum grain should be equipped with simple and easily made ventilators."

Principles affecting the storage of these grains as given by the bulletin are:

The more moisture the grain contains when put in storage, the more readily it will heat.

The larger the quantity stored in a single bin, the greater the risk of damage by heating.

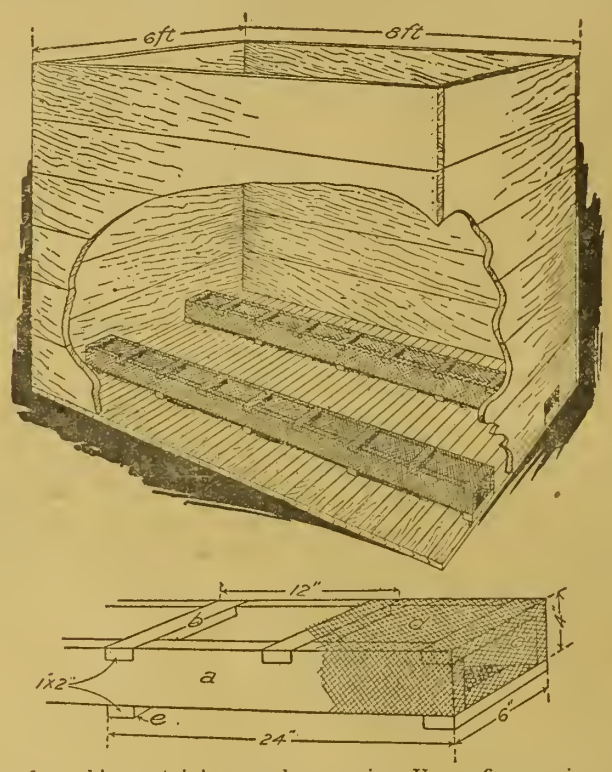
The warmer and damper the climate, the quicker the grain will get out of condition.

The more cracked kernels and dirt the grain contains, the closer it packs, the less air can circulate, and the greater the danger of loss.

Weevils working in grain increase its temperature and decrease the spaces for air circulation, thus making conditions favorable for further damage from heating.

In elevators it usually is possible to prevent damage from heating when it first starts by running the grain from one bin to another. In this way it is aired and cooled. This shifting of the grain must be repeated whenever rising temperature in the grain makes it necessary.

Most farms are not equipped with machinery for handling grain. The farm bin, therefore, should be provided with ventilators if these grains are to be stored. Different kinds of ventilating devices have been described. Of these, only one of the most practical is described and illustrated in this bulletin.



Ventilator for a bin containing sorghum grain. Upper figure, view of two ventilators in position on floor of bin, showing opening in side of bin. Lower figure, detailed structure and dimensions: (a) Side of ventilator; (b) cleat mortised in upper edge of a; (c) wire screen over end of ventilator; (d) wire screen covering top and bottom, also sides; (e) cleat on bottom to raise ventilator from floor.

Student Testifies to Inspirational Value of Farmers' Short Course

W. R. Greenwood of Winchester, Riverside County, has written to the college of agriculture of the University of California in regard to the great inspirational value of the Farmers' Short Courses held at the University Farm at Davis. The Farmers' Short Courses for the fall season will open Monday, October 1. Full information in regard to the subjects to be offered may be obtained from the College of Agriculture, Berkeley, or from the University Farm School, Davis.

Mr. Greenwood's statement is as follows:

"If I were to attempt a 'quantitative' analysis of the value of the short course to me, I would at this time fix the percentages something like this:

	Per Cent
Inspiration	40
Information	30
Social and vacation enjoyments	10
Training	10
Miscellaneous	10
	100

"In the 'miscellaneous' item I would include the equipment which the short course provides for getting facts. By this I mean that the short course student is provided in a small way as the county farm adviser is in a larger way so he may know to what authority to apply for anything he needs to know about his farming operations.

"I may seem to have given 'information' from the lectures, etc., too small a percentage, but if it is small in proportion it is not really small for the whole thing is so big.

"I firmly believe that every farmer in the state ought to attend one of the short courses every five years. These courses are an invaluable aid to the beginner in rural work, but the experienced husbandman can get much from them that the novice cannot."

GRANGE AS AN EDUCATIONAL FACTOR

Continued from Page 149

high schools and even in the elementary schools; of the farm bureaus with their farm advisers all over the country and you will get some idea of what the agricultural department is doing. And yet no other one force did more to get this department firmly established than did the Grange.

Taking up the educational work in a more direct way, we just mention the fact that several of the states are assisting worthy young men and women in securing agricultural educations. Several state Granges have what they term revolving educational funds. These funds vary in amounts with the several states and are loaned to young men and women who are not able to complete their agricultural education in any other way. After these students have completed their courses and become able to do so, they are expected to turn the amounts borrowed back to the Grange revolving funds and it is then loaned again to others for the same purpose. Last year Massachusetts assisted 90 young people to secure their education.

And so it is all through our work. We always encourage education; and before leaving this part of the work, I must call attention to the greatest of all our facilities for educating the farmers and that is the opportunity given them to attend our regular meetings and of learning through these meetings the opinions and practical experiences of the best and most successful and most progressive farmers of the community, as well as to learn to stand on their feet and express their own opinions.

One of the crying needs of the farmers today is to get more of them to be able to attend public meetings and take the part in the meetings that farmers ought to take. Whenever it becomes necessary or advisable to call any public meetings which directly concern the farmers, these meetings are invariably called and conducted by men who are not practical farmers. Why is this the case? Simply because the great majority of farmers are not sufficiently educated and have not the confidence in themselves to take their proper places.

There is no better agency than the Grange to teach our farmers to think clearly and argue intelligently. And when they have learned that they will be able to form definite conclusions on public issues and then maintain their stand.

A glimpse is now afforded of the kind of government the nihilists always wanted.

Elevator Pays for Itself

The Sutter County Farmer gives account of an elevator built at Hamilton in Glenn County, which was recently inspected by a number of Sutter County people. It was built by one of the larger Glenn County farmers, and if the economical methods which it permits can be secured in other sections the state should be dotted with elevators before another year. In the account of the inspection we note that:

"The elevator at Hamilton City is a new one and has a capacity of 60,000 sacks. It was built for $18,000 and as the owner will harvest approximately 100,000 sacks of grain this season he will save $26,000 on bags alone, thus paying for his elevator and having $8000 besides. He is operating three big steam harvesting outfits and upon each is a storage bin of 50-sack capacity. No sack sewers or tenders are required, and the grain is taken from the harvester, unloading by gravity from the bin into other bins on motor trucks and conveyed directly to the elevator where one man handling a set of levers does the rest. The grain in the bins on the trucks is emptied into a chute and then taken to a bin for weighing, then conveyed through a cleaner and then to the proper grade apartment in the big structure. The loading from the elevator into the cars is done just as easily and quickly. Under this method there is a saving in the cost of handling, a saving of grain and a saving of time."

How to Poison Gophers

Written for California Cultivator By C. A. Nidever

I NOTICED an inquiry in your paper as to best method of poisoning gophers.

The regular grain poison put up for squirrels is as good as anything. It is generally barley these war times. The important part of the operation is to get the poison in the right place.

At this time of the year when the ground is dry dig with a shovel until the runway is opened up. A gopher has a runway anywhere from six inches to 24 inches under the ground. The opening at the top is only an offshoot from the main run and is always plugged with dirt again, while the main runway is always clear.

After finding the main runway put a quarter or half a teaspoon of poisoned barley in each opening. Place a clod over the hole to keep the dirt from running in onto the poison and cover over with dirt.

When the ground is dry the gopher works closer to the top in the loose ground broken by the plow. In damp ground he goes deeper. In the spring the runway can often be found in the damp soil by inserting a sharp stick. A person can tell when the point breaks into the run. Drop in a little grain and cover with a clod of dirt.

Gophers are very easy to control if one will take a shovel and go to it. They will eat poisoned fruit, nuts, raisins and vegetables, but the easiest and cheapest method is to get the regular poisoned grain.

By systematically going over the ground every two or three days gophers can be entirely eradicated. Get the poison in the main runway and you have got a dead gopher. Get them. They are Kaiser Bill's friends.

Important to Cotton Raisers

State Entomologist Morrill of Arizona issues a statement as to keeping some serious pests out of cotton fields in a very simple way. He writes:

Alfalfa fields are breeding grounds for the most destructive cotton pests in the state. When an alfalfa field is cut beginning at the side opposite and working toward a cotton field certain pests, particularly grasshoppers and the cotton square stainers, are driven to the cotton plants, and the resulting damage to the cotton is frequently very serious.

Grasshopper damage is conspicuous since these pests when present in large numbers may completely defoliate the plants. Usually such severe injury is confined to a few acres on the side of the cotton adjoining an alfalfa field. Prompt action in spreading poisoned baits in the heavily infested areas will check these pests.

The most serious damage resulting from driving insects from alfalfa fields is done by a small sucking bug heretofore called the tarnished plant bug, but which may more appropriately be called the cotton square stainer. This insect sucks the cotton squares (flower buds enclosed by three bracts), causing them to flare, turn yellowish and drop off. While feeding on the squares the insects daub the buds and the inner sides of the bracts with a yellowish liquid excrement which almost invariably indicates that the square will soon flare and fall. Newly set fruits or bolls are injured in the same manner. An average of two of the bugs to a plant is sufficient to prevent the setting of any bolls. When driven from alfalfa fields their numbers sometimes average eight or ten to a plant.

These bugs are not new. Their injury in the Salt River Valley during the past three seasons has been described by the state entomologist in his last three annual reports. The appearance of the insects in excessive numbers is usually local, but each season a few cotton growers suffer heavy losses. With the greatly increased cotton acreage this year a proportionally large number of growers are interested in means of preventing these losses. While the pests have been observed, in one instance at least, to occur in excessive numbers on cotton growing two or three miles from alfalfa, as a rule the most severe infestations are found where cotton fields adjoin alfalfa fields and where in cutting the alfalfa the work has been started on the side of the field farthest from the cotton.

On account of both the grasshoppers and the square stainers alfalfa cutting and raking should usually be started on the sides of a field and continued toward the central land or a land near to it which should be left temporarily as a trap. When concentrated in a limited area in this way the grasshoppers may be poisoned with poisoned bait or captured by means of a "hopper dozer". A modified hopper dozer is being made for trial in the hope that it will capture the cotton square stainers as well as grasshoppers. Even though no practical means is found for capturing or destroying the square stainers after they have been concentrated on uncut alfalfa in the middle of the field, much benefit will result from the cutting practice recommended. On the other hand the practice of cutting alfalfa from the far side of the field working toward the cotton is very likely to bring disastrous results to the cotton grower.

CALIFORNIA STATISTICIAN'S REPORT

The state board of agriculture is sending out its most complete report. It is much larger than any preceding one; there are 538 pages, touching upon nearly every feature of California's production and mercantile industries. It is compiled by State Statistician George Robertson. The introduction is prepared by President of the Board George C. Roeding, which closes with: "As representatives of the great producing interests of California, let us cheerfully do our share and give our aid in promoting the wonderful resources with which this grand state of ours has been so magnificently endowed."

Arrange your work so you can be sure to attend Mammoth 3d Annual Tractor Demonstration

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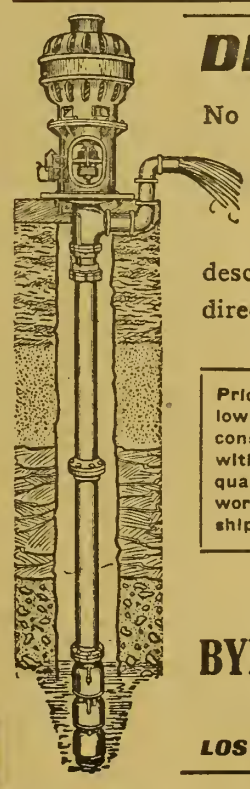

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Iceland, too far north to raise wheat, is preparing to make herself independent of grain ships by converting part of her potato crop into flour.

The Horse Breeding Situation

Written for California Cultivator by Wayne Dinsmore, Secretary Percheron Society of America

I HAVE but recently returned from a business trip through the Canadian Northwest and down the Pacific Coast, and have just finished going over my correspondence with horsemen in the corn belt states. It occurs to me that you and your readers will be interested in knowing about the horse breeding situation in the districts mentioned.

Northwest Canada believes in draft horses, especially Percherons, as is shown by the fact that her farmers bought more than 1000 head during the 19 months ending July 1, 1918. They want more good Percherons there, but have been hard hit this year by the drouth, and because of lack of feed, grain and money, will not be in as good a position to buy breeding stock this coming winter as in the past two years. I look for considerable trade, however, in spite of the partial failure mentioned.

On the Pacific Coast the demand for horses standing over 16.2 and weighing over 1700 pounds is in excess of the supply, but there is a surplus of smaller stuff. Fred H. Bixby of Long Beach, who has very large ranches at seven different points on the coast, and who is one of the best informed horsemen, says:

"In regard to the horse conditions in California, I am of the opinion that a great many of the former horse breeding companies have gone out of the business, but this last spring the horse business seems to have begun to look up, and a good many people are breeding again, and I think within a year or two the business will be in a flourishing condition.

"The mule market is improving by rapid strides. I am quite positive that within the next two or three years, regardless of the tractors and motor trucks, the horse and mule business will be back to its normal state.

"We find no trouble in disposing of our big horses and big mules, but the horses weighing from 1200 to 1400 pounds and the mules under 1000 pounds are poor sellers.

"I am of the opinion that the owners of Percheron, Shire, Belgian, or Clydesdale stallions could sell them now quite easily on the Pacific Coast, provided they put a reasonable price on their animals.

"I think the day of the $3000 to $5000 draft stallion for use on grade mares is over for at least the next ten years. The stallion men will have to get down on earth if they want to do any business, and if they do they can make a whole bunch of sales."

Miller & Lux, who own 10,000 horses in California alone, believe that heavy draft horses will be in strong demand within a few years, and at high prices. Anticipating this they are breeding every available mare, 1800 to stallions and 700 to jacks—and intend to be prepared to reap the benefit of the probable demand.

In Utah and Colorado the best informed horsemen are of the same opinion. In every district visited there was a decided shortage of real drafters, and of foals, yearlings, or two year olds that promise to develop into draft proportions. Many men reported that they were even now in the market for more big farm teams and knew not where to get them.

The inclination to swing all attention to grain and meat production has unquestionably cut the breeding of heavy work horses and mules to a dangerously low level. We must not permit our reserves to fall away to a point where agricultural production will be impaired. It is up to each farmer of the corn belt to raise the horses and mules he will need for replacement purposes three years from now, and to rear enough surplus to provide for at least two other farms that raise none; for there are thousands of farmers in the East, South and West who do not produce their own work animals and who must buy.

Let us not fail to produce the horse power that is so urgently needed in this critical time. The war will be won by the side with the largest reserves.

No Proteinless Days for Hogs

Feeds that are rich in protein, such as shorts, middlings, tankage, and oil meal, so essential to the proper development of hogs, are hard to get and high in price. The United States department of agriculture is urging that hog growers provide substitutes for these feeds in the form of home grown crops that are known to be rich in protein, and is advising the use of fish meal where it is obtainable. Alfalfa hay, soy beans, cowpeas and oats are suggested as good substitute feeds. In addition to these peanuts, cottonseed meal and velvet beans are available to hog growers in the Southern states.

Fish scrap, which has heretofore been used as a fertilizer, has been tried in hog feeding experiments conducted by the department of agriculture, and it has been found that meal made from this material is on a par with tankage when fed to hogs. A number of state experiment stations are now conducting similar experiments in feeding fish meal to hogs. Owing to the transportation situation, however, it is believed that fish meal can not be fed economically in the Middle West.

Shortage in protein feeds can be met with alfalfa hay in all localities where it can be grown or obtained at reasonable prices. There are two ways in which this hay can be successfully fed—in small racks placed in protected sheds where the hogs may have free access to it, and by grinding it and feeding it in self-feeders or soaked in the form of thick slop. The department's specialists urge that hog growers provide an ample supply of alfalfa. Usually the last cutting of alfalfa is saved for hog feeding, but for fear this cutting can not be harvested in good condition, on account of weather conditions, a sufficient amount of the second and subsequent cuttings should be saved to supply enough feed for hogs.

Rye sown in the fall makes good pasture for hogs. As soon as it is three or four inches high, the hogs can be turned in.

Soy beans are valuable to take the place of other protein feeds usually purchased. They make a very satisfactory feed when the beans are fed thrashed, or as hay, or when ground as meal. Soy-bean hay, to be most satisfactory, should be cut early enough to avoid the popping out of the seeds. The leaves and the seed both will be readily eaten when handled in this manner.

SHASTA COUNTY STOCKMAN DEPRIVED OF GOVERNMENT RANGE

Because he was too tired to fight a forest fire which he had discovered, and because he failed to report it to the forest ranger, W. L. Callison, a well-to-do rancher and stockman of Shasta County, has been ordered to remove his cattle from the Shasta national forest within ten days.

Some time ago Callison and his son, while on a trip to Dick Rock Flat, in the mountain south of Bartle, Siskiyou County, discovered a forest fire. They returned home next day without making any attempt to put the fire out and, although they passed two telephones on their way, neglected to report the matter to the forest ranger.

Before obtaining a permit to graze cattle or sheep on the national forests of California, every stockman must sign an application in which he agrees to "render all reasonable aid in extinguishing forest fires within the district in which the stock is grazed." The permit itself may be revoked and the stock must be removed from the forest "for a violation of any of the terms of the application on which it is based."

"To successfully protect food, forage and forests from fire," says Acting District Forester Headley, "we must have the whole-hearted support of everyone using the national forests. The stockmen of the state have as a whole come forward in excellent shape this year. Such individual cases as the Callison instance will of course be promptly dealt with."

EMERGENCY FEED FROM DESERT PLANTS

An emergency drouth time feed for Southwestern stockmen which has previously been overlooked is the desert shrub locally known as soapweed. Its scientific name is yucca. While this plant is not high in nutritive value nor suitable for feed until it has been properly ground, the specialists of the United States department of agriculture have found that in seasons of drouth when range grasses and other sources of feed fail it can be used to save cattle and sheep from starving. By the addition of a little cottonseed meal with ground yucca a fairly well balanced ration is made. By using this feed without waste in dry seasons only, a fair crop will always be available. If it is used properly and due regard given to conserving the present supply, thousands of cattle may be saved during the drouth season to add to the nation's meat supply.

There are a score or more species of yucca. Sotol has been utilized as stock feed for some years, but only recently have soap weed and bear grass, two other forms which grow abundantly, been utilized in this way.

SHADE AND WATER FOR HOGS

Donald Acklin of Ohio, one of the state and federal representatives working for the increased production of pork in this season, is calling attention to the need of shade and water for hogs at this time.

"During the hot summer months," Mr. Acklin says, "shade and water are of the most vital importance in the successful production of pork. If nature has not provided shade in your pastures and lots, build some sort of shelter in a fence corner. Uncomfortable animals do not thrive.

"If you are not provided with a spring or running water, an automatic waterer is almost indispensable in hot weather. Clean water is essential. A clean wallow should also be provided.

Concrete wallows are inexpensive to construct and aside from serving the purpose of keeping hogs cool, they will keep the herd absolutely free from lice if a coal tar dip is used in the water."

SELF FEEDERS NEED ATTENTION

As a result of the shortage of farm labor the use of the self feeder for hogs has been widely advocated this season. Some of these devices do not "feed down" properly and the feed is sometimes withheld from one or more compartments. Even when the feeder is working properly the feed is likely to become exhausted in one compartment before it does in the others. If any part of the ration is lacking the hogs are sure to eat more heavily of the remaining feeds, sometimes of the most expensive ones. This wastes feed, has a detrimental effect on the digestion of the hogs, and is likely to result in a loss of profit. The self feeder is, therefore, to be carefully watched.

New System of Alfalfa Irrigation

Written for California Cultivator by W. A. McCall

THIS system, originated by A. F. LeGay of Elsinore and practiced by others in the Elsinore Valley, begins with the preparation of the soil for seeding.

The ground is harrowed perfectly smooth and seed sown. Then furrows 36 inches apart and about four inches deep and four inches wide are run through the field with a cultivator. A chain is hung loosely from the cultivator shovels and dragged behind, which levels down the edges of the furrows and covers the seed.

To irrigate alfalfa the water is run rapidly down the furrows until it reaches the end of the field, then it is run down slowly until it has seeped out on each side and the three foot strips between the furrows are entirely saturated. The time required to thoroughly wet the land by this method depends largely upon the character of the soil. The time required in Mr. LeGay's field, which is a medium loam, is six hours, the furrows being about 600 feet in length. On very heavy soil better results are secured if the furrows are 30 inches apart.

The alfalfa field is irrigated each month one week before cutting, which produces an extra heavy growth. Then when the hay is removed the ground is already wet and the alfalfa is up and growing without the loss of time in irrigating and the loss of water due to evaporation.

As the water from the furrows seeps to the alfalfa roots from the sides and beneath instead of being poured on top, this system gives practically 100 per cent efficiency in the utilization of water. The irrigation by furrow before the alfalfa is cut does not wet or damage the alfalfa leaves, saves a great amount of water and increases the tonnage of alfalfa.

Many of the farmers in Elsinore Valley have tried out this system and found it successful, and others are adopting it. The alfalfa yield on Mr. LeGay's ranch for five cuttings this summer under this system has been eight and one-fourth tons per acre. One cutting alone produced two and one-third tons per acre by actual weight. Pretty good, isn't it?

Field Notes from the Live Stock Men

Jean du Luth Coronet 52816, a three year old heifer owned by Jean du Luth Farm, Duluth, Minnesota, recently completed a record of 12603.9 pounds of milk and 580.61 pounds of butter fat and carried a calf nine months of her testing period. This performance entitles her to first place in Class EE. Among her winnings in the show circuit are first prize at the Minnesota State Fair, while on the advanced register test; first prize and silver cup for two year old at the Waterloo Dairy Cattle Congress in 1916; and first prize in the three-day butter contest for two year old Guernseys at the Illinois State Fair.

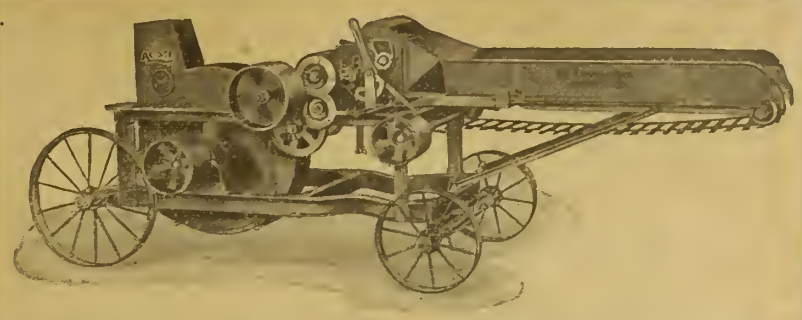
Another fine Guernsey comes to California, Edgemoor Farm purchasing Pencoyd's Golden May Secret 39626. The announced price is $10,000. The previous high record for a Guernsey bull was reached at the Combination Sale of Guernseys, near Chicago, on May 16, 1918, when Don Diavolo of Linda Vista 23565 sold for $10,000. Pencoyd's Golden May Secret 39626 was sired by Langwater Pencoyd 21830 and is out of Nella Jay 4th 38233, which holds third place in Class A with a record of 20,709.9 pounds of milk and 1019.25 pounds of butter fat. She also holds eighth place in the three and one-half year old division with 16,039.9 pounds of milk and 769.33 pounds of butter fat; and third place among the junior two year olds with 14,772.7 pounds of milk and 726.32 pounds of butter fat.

Linden Girl of Harbor Hill 3rd 58625 has recently completed a record in Class CC of 15,032.9 pounds of milk and 785.89 pounds of butter fat. This record not only places her at the head of her class, but it also entitles her to become the champion cow of the breed in this new maternity class. On March 8 she had to her credit 15,769.9 pounds of milk and 830.16 pounds of butter fat and had carried a calf 249 days. This production would have placed her in Class C.

CHOOSING A BREED

The question, "Which is the best breed of swine?" cannot be answered by naming any one breed. Some breeds are superior to others in certain respects, and one breed may be better adapted than another to certain local conditions. In general, the "best" hog is the one the farmer likes best, provided it is what his market demands. He will not make a mistake, however, if he makes a selection from the breeds already established in his locality. This is a matter which the farmer will have to decide for himself.

After the farmer has decided upon the breed of hogs which he believes to be the best and most profitable for him to raise, he should stick to that breed and endeavor to develop it to its highest possible standard. It is impossible to get the most out of swine breeding by continually changing from one breed to another. There is adequate room and market for the different breeds of hogs, but it would not be profitable for one individual to try to raise several and bring them to perfection. Farmers' Bulletin 765, United States Department Agriculture, Washington, D. C., gives information on breeds, types, conformation.—W. E. Schneider, University of Arizona.



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How to Make Home Made Cheddar Cheese

THERE is a more than usual interest in home methods of cheese making at this time. Here are directions for making cheddar cheese as given by an Australian cheese expert, G. C. Sawers, of Victoria, in the Journal of Agriculture.

For making a small quantity of milk into cheddar cheese, the following articles are required: A wooden tub (or a jacketed vat) with movable cover, a long-bladed knife, cheese moulds, cheese press, thermometer, curd rake, one ounce and a six ounce measure glass.

When both the evening and the following morning's milk is to be used in the one operation, it is advisable to cool the evening milk (early after milking) by standing it over night in cold water.

Stir this milk occasionally till bedtime.

In the morning (before the morning's milk has been added) skim the evening's milk.

Add the starter to the skim milk (one ounce to every ten gallons).

Heat the cream (by standing in hot water) to about 80 degrees Fahrenheit and remix with the milk in the vat, stirring thoroughly.

Add the uncooled morning's milk. (When mixed the temperatures of the whole milk in the vat should be 84 degrees to 86 degrees Fahrenheit.)

If colored cheese is desired coloring should be added and stirred gently for two or three minutes—a quarter or half-teaspoon to every ten gallons.

Now ascertain by the following test whether the milk is ready for the rennet: The milk in the vat should be about 85 degrees of temperature. Take four ounces of the milk in a cup and float a tiny wooden chip (bit of wooden match) on the milk; noting the position of the second hand on a watch add one drachm of rennet; stir immediately for ten seconds; then withdraw the spoon and note carefully the time of coagulation. (Coagulation is indicated by the chip becoming stationary.) If coagulation occurs 18 to 20 seconds after the introduction of the rennet, the milk is ready for renneting without delay. If a longer time elapses the milk is not yet ripe enough and some delay is necessary.

Assuming the test shows the milk to be ripe, note the time and add the rennet — about one-half ounce for every 100 pounds. (The amount of rnnet is important, but as different milks vary in their curd content and different kinds of rennet vary in strength, the exact amount can only be arrived at by experience.) The rennet, before adding, should be diluted—20 parts to one with clean cold water.

Stir the milk for three to five minutes after adding the rennet, and watch for the milk coagulating. When this occurs, carefully note the time, because the time which elapses between the adding of the rennet and the setting of the curd is the best guide when to cut the curd. (Coagulation should occur in 12 to 14 minutes.)

As soon as the milk shows the first indication of thickening, and time has been noted, place canvas cover over the vat.

The number of minutes which the the milk took to curdle should be multiplied by 2½, and the number of minutes in the result is the time to be allowed between coagulation and cutting. Thus, if it took 12 minutes to thicken, it should be ready for cutting 30 minutes after. At this stage the curd should split clean in front of the thermometer when inserted diagonally.

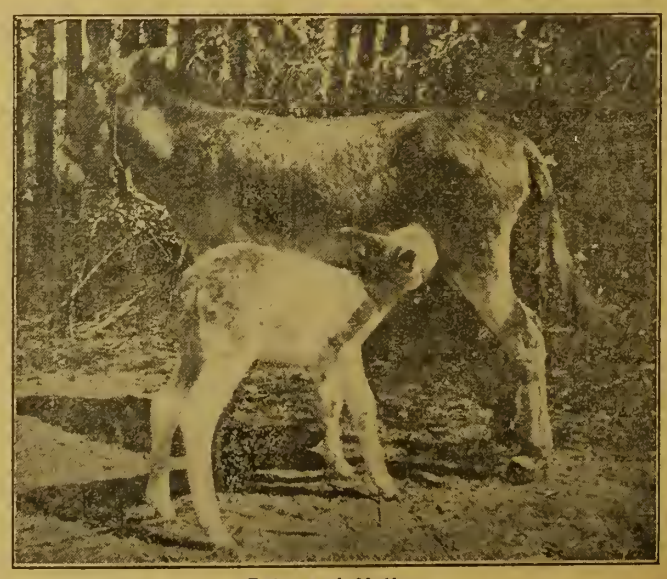
Cut with a long-bladed knife in strips one-fourth inch apart lengthways. Then do the same crossways, so that the surface appears cut into one-fourth inch squares. Uniform cutting is important. After cuttting allow the curd to settle to the bottom of the tub for a few minutes, but dip off a portion of the whey and scald it up to 140 degrees Fahrenheit.

Stir the curd gently by hand for 10 to 15 minutes before applying the rake.

Add a little hot whey.

Stir gently with rake and add whey every 15 minutes, increasing the quantity of each application. While stirring continuously, the hot whey should gradually be raising the temperature required, viz., 96 degrees Fahrenheit in warm weather, or 102 degrees in cold weather, and this should be reached 40 to 45 minutes after stirring commenced.

Except during an occasional stir to prevent consolidation, it should be now left covered up with the canvas to maintain the temperature (96-102 degrees) till it is time to run off the whey. This is ascertained by the hot iron test, as follows: Heat a piece of iron rod or pipe, not red, but hot enough to make water sizzle when dropped on it. Take some curd in the hand and squeeze tightly to press out the whey. Gently apply the iron rod to this curd for a few seconds and lift



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slowly away, observing while doing so the adhesive properties of the curd. If the curd adheres to the iron, and draws out in short fine silky threads one-eighth inch long, it is at the right stage for running off some of the whey (enough to expose the curd). With good milk the first whey is usually run off two and a half to three hours after the adding of the rennet. If curd is not ready for dewheying in three hours, a faulty cheese is almost certain to result. If ready earlier than two and a half hours, a pasty cheese may be expected. The remainder of the whey may be drained off when another test of the hot iron produces threads one-fourth inch long.

Gather the curd six to eight inches deep, and tilt the vat for hetter drainage. Allow the curd to remain so stacked to become solidified (this process is called matting) for a quarter of an hour, when it should be cut to its full depth, lengthways and across, into junks about nine inches by four, and turned completely over. Repeat the turning every quarter of an hour, the temperature being maintained evenly—94 to 96 degrees—until the curd becomes tough or meaty, usually about two hours after the stacking. (The frequent turning insures even drainage and uniform color.) Again apply the hot iron test to the curd, and threads should draw out three-fourths to one inch long. If this occurs, the curd is ripe for milling.

Milling may be done, with small quantities, with an ordinary carving knife, with which cut the junks into cubes of one-half inch dimensions. It should then be stirred every quarter of an hour, but always cover when not stirring, as the heat should be maintained at about 95 degrees.

One hour from milling apply the hot iron test again. If curd pulls out in threads 1½ inches it is ready for salting. At this stage the curd assumes a peculiar velvety feeling, and when compressed in the hand exudes moisture composed of equal parts of whey and butter fat. Salt at rate of about four ounces per ten gallons of milk, but add only half the amount at one time, and stir thoroughly before adding the remainder. Mix well and leave curd massed up for 15 minutes. During the process of salting the temperature may be permitted to fall, and at completion should be 84 degrees.

Pack the curd firmly into the mould, in which cheese cloth has been inserted. When filled, lap the cloth over the ends. Put wooden follower on top and place in press. Apply pressure gradually until whey ceases to escape. Then remove cheese from mould, lift loose ends of cloth from top, draw out the wrinkles, and insert disk of muslin on top. Lap loose ends over again and place back in press. Gradually increase pressure until late at night, when it may be left. Remove cheese from mould next morning, and place in storing room, where temperature should not exceed 60 degrees. Stand on clean shelf, and turn over daily for two months, at which time it will be ready for use.

A Few Sheep on Every Farm

THE San Joaquin County farm bureau has inaugurated a campaign to increase mutton and wool production and suggests in its Monthly that the need for increased sheep production is very apparent, since the United States is producing less than one-half of the wool consumed in this country, and the demand is being further increased for use of the army and navy. Wool supplies which have normally reached the United States are now being used in other countries. As the size of our army increases the needs of the government for wool will increase, and a serious shortage of wool in this country seems inevitable. The farmers who maintain a flock of sheep will not only have an opportunity for a considerable profit, but will be rendering a distinct service to the country.

Sheep raising in California has largely been confined to large flocks, comparatively few sheep being raised in smaller flocks on ordinary farms. As a matter of fact, a small flock of sheep is a valuable additon to almost any farm. Sheep will utilize weeds and waste about the fields, fence corners, orchards, irrigation ditches, etc. They require very little hand feeding, suhsisting mainly on grass and other forage and can well be run with other stock. They return two cash crops yearly; namely, wool and lambs, and are also valuable from the standpoint of fertility of the soil.

Feed conditions in California this year are such that it seems that some of the large flocks of sheep must be slaughtered this fall. If these sheep could he placed in smaller flocks on farms it would not only result in better agriculture in the state, but would be a distinct service to supplying wool and mutton in this time of need. In view of the foregoing facts, it seems advisable to inaugurate a campaign to encourage the keeping of a small flock of sheep on many farms in California where sheep are not kept. The division of animal husbandry of the College of Agriculture is willing to supply information regarding the best methods to pursue in handling such a flock of sheep, and to assist in securing sheep from the ranges or other places and distributing them on farms. The farm bureau furnishes an organization through which this information can be disseminated and farmers encouraged to secure and keep a flock of sheep.

The division of animal husbandry will furnish information regarding the mutton and wool situation, and where sheep may be secured, and will assist to the extent of purchasing large bands of sheep to be distributed in small flocks among farmers, if such procedure is necessary. In such a case each farmer ordering sheep will deposit a fund in his local hank sufficient to cover cost of sheep ordered, this fund to be drawn upon by the directors' committee of the farm bureau when sheep are delivered. There shall be no charge for services on the part of any memher of the staff of the college of agriculture, and no profit shall be derived from the handling of sheep. Where it is possible for farmers to purchase direct from owners of flocks, the financial transaction shall be direct between purchaser and original owner.

Committees will be appointed in each farm bureau center to list all farmers not now keeping sheep, who are interested in securing a flock of sheep and desire to secure sheep this summer or fall. If you have sheep for sale or desire to huy sheep, let the farm hureau act as a clearing house of information.

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For Sale — Registered Berkshire pigs sired by Lord Premier's Successor 11th. J. Pringle, at Oak Crest, Cahuenga Pass, R. D. 10, Box 864, Los Angeles. Holly. 14R3.

Castleview Berkshires are the typey, modern, quick-growing kind, choicest blood lines. Prices reasonable. Castleview Ranch, Berkshires exclusively, Santa Rosa.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

For Sale—Pure-bred Poland-China breeding stock, 6 to 12 weeks old. None better in Sacramento Valley. Address Fred A. Clark, Hamilton City, California.

Fine big smoothe Poland-China boars and gilts $20.00. Registered and crated f. o. b. Live Oak, California. A. J. Stohlman.

Duroc-Jerseys — We breed the champions. Peters, Lamson & Walker, Devore, San Bernardino County, California.

Greenwood Farm Durocs — "Size with Quality." H. C. Witherow, Palo Cedro, California.

HEWITT'S BIG TYPE POLAND-CHINA gilts and boar pigs. Hewitt & Hewitt, Dixon, California.

Registered Durocs of the big type—Cholera immune. Derryfield Farm. Odd Fellows Building, Sacramento, California.

Berkshires—A few very fine March farrow pigs, sired by Fair Oaks Champion. Fair Oaks Ranch, Willits, California.

Carruthers' Farm Berkshire Hogs—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Oriand, California.

BIG TYPE POLANDS
W. H. BROWNING, WOODLAND, CAL

SEEDS AND PLANTS

Early Amber Sorghum makes the best silage and produces the greatest tonnage per acre. Recleaned seed 9c per pound f. o. b. Stockton. Fancy recleaned Sudan seed at 18c per pound f. o. b. Stockton, in lots to suit. Aurora Seed Mill, 48 N. Aurora St., Stockton, California.

Cabbage and Cauliflower Seed, also late plantings of many vegetables should be started now. Buy of C. C. Morse & Co., dealers in good seeds, San Francisco.

LUMBER

Lumber-Sash-Doors-Plumbing - Supplies —Building materials of all kinds. New and second hand *A*R W. shingles 60c per bundle. Send list for estimates. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco.

CATTLE

SHORTHORN CATTLE, SHROPSHIRE SHEEP. Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., California. W. P. Dwyer and W. S. Guilford, Owners.

Pedigreed Bull Calves, Registered $50.00, unregistered $25.00. Service bulls $75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, California.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAllister Sons, Chino, California.

Registered Shorthorns, cows with calves at foot, yearling heifers and bulls for sale. Fair Oaks Ranch, Willits, California.

Ayrshires (registered) — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

Elkhorn Farm Ayrshires—For sale young bulls of exceptional breeding and individuality. J. Henry Meyer, R. D. 2, Box 82, Watsonville, California.

Sunshine Farm Jerseys — Young bull, ready for light service, for sale. E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

REGISTERED JERSEYS FOR SALE. J. R. CARHART, FULLERTON, CAL.

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Fall Chicks For Sale—400,000 S. C. White Leghorn chicks from free range Hoganized stock only, for delivery from July to December, at very reasonable prices. Fall chicks are most profitable—broilers in ten weeks, pullets lay at five months. We guarantee safe delivery of all chicks to destination. Shipped safely anywhere West of the Rockies. No money in advance, pay on delivery. Special prices on 500 and 1000 lots. Finest hatchery in the world. Established over twenty years. Further information write Must Hatch Incubator Company, 424 Seventh Street, Petaluma, California.

Feed High; Eggs, Meat Higher! Our 200-290 egg Leghorns, Anconas, Reds, Rocks, Wyandottes, Minorcas, ducks are more profitable now, clearing $5.00. Some greatest government trapnested hens, 280-283. Hundreds breeders, laying, younger pullets; thousands chicks weekly; reasonable, fine males $1.00 up, worth treble. James Beeson, Pasadena, California.

Thoroughbred Barred Plymouth Rocks—Fertile eggs for hatching. $2.50 per 15 eggs. Orders taken for baby chicks August, September and October delivery, 25c each. Rocks hatched these months lay 75 per cent at one year old. Warren Poultry Yards, 36 Little Deimas Ave., San Jose, California.

Fall Chicks — Book order now for your future meat and egg supply. Write for special circular on fall chicks. Stubbe Poultry Ranch and Hatchery, Palo Alto, California.

Chix—Barred Rocks, R. I. Reds, Orpingtons, Anconas, Minorcas, Buff, White and Brown Leghorns. Breeding Cockerels. Enoch Crews, Seabright, California.

Black Orpingtons Lay, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S Reservoir, Pomona, California

Eastman's Bred-to-Lay Barred Plymouth Rocks. Hatching eggs. Fairmead Poultry Farm, Fairmead, California

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ENGINES

Several New and Slightly Used Engines, ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

DOGS

For Sale—Airedale pups. Pedigreed. The best all-round dogs. Whelped June 17. R. E. McCoy, Terra Bella, California.

RABBIT MEAT

Suggestions by the food administration that hare and rabbit are suitable substitutes for the meats needed for export have added to the general interest in these little animals. Rabbits and hares vary considerably in the quality of meat, depending largely on breed and age. Those raised primarily for meat are the Belgian, New Zealand, Flemish and similar varieties. The meat is of good flavor, practically all lean and is prepared in the same manner as chicken. In Europe rabbits and hares are staple foods.

Barreled Pippins are selling in New York at from $8.00 to $10 per barrel; boxes are running $2.50 to $4.00. Winesaps are commanding from $2.50 to $3.50 per box; Black Twig and Ben Davis, $2.50 to $4.00.

Italy has published a decree requisitioning 1918 crops of wheat, barley and rye.

Why Not an Egg Day?

Written for California Cultivator By Jean A. Koethen

WE HAVE had orange day and raisin day and who knows how many other days on which the virtues of this or that product was advertised, but I have seen no suggestion as yet of an egg day. We have eaten oranges and raisins and figs and dates at the behest of those who had them to sell, but we have not offered them our own special brand of food in return. And yet our own is the best. The egg has every other kind of food, with the single exception of milk, pushed clear off the map when it comes to real solid, satisfying qualities. Along with milk it claims respect and consideration as a perfect food.

This suggestion is not meant to be facetious. Why not have an egg day, when every householder, small and great, young and old, sick or well, shall be exhorted to eat eggs. No one is too old, and few too young, hardly any one too feeble, and only a few bumptious folk too robust for eggs. They are the universal as well as the perfect food.

We have been forced to save meat and conserve wheat and go without sugar, but, glory be, no one ever needs to go without an egg if he has the money to pay for it. The supply will always keep pace with the demand. There are plenty of poultrymen now in Southern California who would be delighted to hatch more pullets that would lay more eggs if only they were sure of getting the cost of feed back plus a trifling profit. Isn't it silly and stupid to kill the hen that lays the golden egg, or what amounts to exactly the same thing, to let the poultryman send her to market because we are not willing to pay five cents apiece for a splendid food product that is actually worth double that amount.

Because our grandmothers fed their hens on the waste grain of the farm and sold the eggs for ten cents a dozen, a good many otherwise sensible Americans have gotten the idea that that is all eggs are worth. We pay 60 cents a pound for bacon and 60 cents a pound for butter but we raise a howl of protest when we are asked to pay 60 cents a dozen for eggs that weigh quite or nearly a pound and a half to the dozen. We pay from 40 to 50 cents for almost any kind of meat sufficient to serve four persons, when two eggs apiece cost not to exceed 40 cents and supply ample animal food for the meal.

The one objection to eggs as a substitute for meat seems to be that they do not quite take its place in the diet of robust, hard working men, and to a limited extent this is a real objection. But even an outdoor worker does not need meat every day, and there is a multitude of persons of sedentary employment that would be vastly better off if they ate eggs instead of meat four days out of seven. Another objection which formerly had weight is, that eggs are more troublesome to serve, but since so many cooks have been on the hunt for ways of serving meat substitutes they have discovered so many new ways of using eggs that you may have your eggs served in a different style for every meal in the week if you wish.

Eggs have always been recognized as the best food for children and invalids (always excepting milk). As our boys who have been wounded at the front come home to recuperate, the first thing they will ask for is eggs. That is the first thing they think of now when a present from home gives them a little extra to spend. Eggs they must have, and we dare not permit the number of eggs in our Sunny California to be diminished further. If we do, they will cost a good deal more than five cents apiece. Five cents apiece the year round will enable most poultrymen to hold on in spite of almost prohibitive prices. Many are holding on now at a loss. Let us do the square thing by the poultry industry and the boys who need eggs and boost for the little white hen and the eggs she lays.

Compulsory Candling of Eggs

REPORTS now being received by the United States food administration from egg producing sections indicate that the practice of compulsory candling is resulting in improved quality. Since June 1, all egg buyers in the United States have been included under a system of licensing which requires that all eggs be candled at time of purchase and that bad eggs be rejected.

Although in the past the importance of candling has been repeatedly pointed out, the practice has been for the most part a voluntary matter among country egg buyers. As the result producers who sold eggs of poor or doubtful quality received as much for them as was paid in the same locality for the fresh, first-quality product—an obvious injustice and no incentive toward improvement in quality.

The general level of prices to producers was consequently depressed in order to make up for the losses from bad eggs which had little or no market value.

Experience during the summer months of the past five years shows that about 25 per cent of all eggs were a total loss and 40 per cent materially depreciated in food value. The food administration has considered such conditions lead to a vicious waste, and the system of compulsory candling now in force places every lot of eggs offered for sale on its own merits. Handling large quantities of eggs which must be discarded as unfit for food is furthermore a needless burden on the railroads and all who deal in eggs.

Every receiver of eggs (including hucksters) must now candle all eggs carefully and include an egg candling certificate bearing his license number with every case of eggs passed on to the next handler. Wasteful practices in the distributing trade are also prohibited and wherever possible eggs should be kept at a temperature below 60 degrees.

Although penalties are provided for violation of these orders the food administration relies principally on voluntary effort and the support of the people in carrying the regulations into effect. Farmers are asked to bear in mind that rotten eggs feed nobody and that any attempts at marketing such eggs clog distribution and help only the enemy. One Missouri egg dealer reports an unusually high quality of eggs this season, stating that they bring within one cent of the top of the market, whereas in former years they brought three or four cents below the top. This experience is typical of many and shows that an improved quality sold under regulated conditions brings additional returns as well as being a direct contribution to the world's egg basket, which must be kept full.

The food administration's specific request to producers is to offer for sale eggs known to be fresh and to support the general plan of paying for eggs on the basis of quality, thus insuring justice to all.

EGG LAYING CONTEST

Storrs, Connecticut, August 1, 1918. Report for the 39th week ending July 31, 1918.

The three best pens in each of the principal varieties are as follows:

Barred Plymouth Rocks

Jules F. Francais, 1559; Tom J. Adamson, 1496; Richard Allen, 1495.

White Wyandottes

Obed G. Knight, 1656; Brayman Farm, 1435; F. W. Harris, 1410.

Rhode Island Reds

Richard Allen, 1542; Pinecrest Orchards, 1402; Pequot Poultry Farm, 1273.

White Leghorns

Hollywood Farm, 1556; J. O. LeFevre, 1554; Braeside Poultry Farm, 1554; Oak Hill Estate, 1520.

Miscellaneous

Oregon Agricultural College (Oregons), 1707; H. P. Cloyes (Buff Wyandottes), 1406; Cook & Porter (Buff Wyandottes), 1349.

POULTRY AND RABBIT SHOW

A combined poultry, rabbit and pigeon show will be held at Oakland, October 1-6, in connection with the Pacific Coast Land and Industrial Exposition.

War savings stamps and cash prizes will supplant the time honored trophies and cups, in view of war conditions and the exhibits will be recruited from as far East as Minnesota, as far south as New Mexico and north to the Canadian border.

The show will be held under the auspices of the Alameda County Poultry Association, C. G. Hinds, secretary; California Pigeon Club, W. J. Head, secretary; Pacific Coast Rabbit and Cavy Breeders' Association, Walter Hickling, secretary. The judges are: Poultry, W. S. Russell, L. W. Potts; pigeon, W. D. DeLong, H. Maltester, I. Weeks; rabbit, Arthur Petty and Louis Regner.

Eggs all through the MOULT!
SHORTEN the moult and lengthen the laying. Globe A-1 Mash (dry buttermilk added) will do it. The live lactic acid bacilli in the dry buttermilk will keep your flock in glowing health: (bulletin 162 U. S. Agr. Exp. Sta., Berkeley).
For Hogs A-1 Hog Feed 10% dry buttermilk) will save from $6 to $12 on fattening each hog.
Fact Book for poultry and hog raisers sent free.
GLOBE MILLS
905 E. 3rd St., Los Angeles
Fact Book
A1 POULTRY FEED
Buttermilk GLOBE A-1 Dry Mash

DEVILS DUST
The Eggs You Didn't Get
How can you expect a hen to lay 150 eggs a year or even 50 eggs if her vitality is sapped by lice and mites—all she can do is itch and fret and cost you money.
DEVIL'S DUST
A Sure Killer of Vermin—
safe and economical to use
Sold Everywhere GLOBE MILLS Los Angeles, Cal.

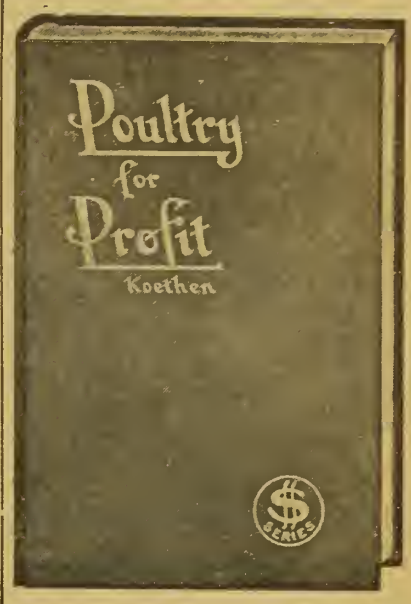
"Sodium Fluoride, recommended by the U. S. Department of Agriculture as highly efficient in destroying lice on poultry, is the principal ingredient in

Talbot's Chicken Lice Powder

For further particulars ask your dealer or write

Talbot Mfg. Co. Los Angeles

Poultry can be made to Pay



THERE are two methods of gaining knowledge, necessary to make poultry a success; experience—which is a long, drawn out, expensive road and the one too commonly used. Another method is by the careful studying of books written by practical poultry people who have made mistakes and successes and are willing to give this information in order that you may take the short road to poultry success.

Poultry for Profit

BY

Jean A. Koethen

Graduate of University of Calif.

Gives more practical knowledge of every branch of the poultry business in a more concise and simple manner than any similar book published. With the knowledge gained by a study of this work experience in the poultry business is not as necessary. Through its guidance obstacles are overcome before it is too late.

The book is 5½x8 inches and contains 12 chapters, with over 225 pages of text and 18 pages of illustrations, printed on eggshell book, binding full cloth vellum de luxe.

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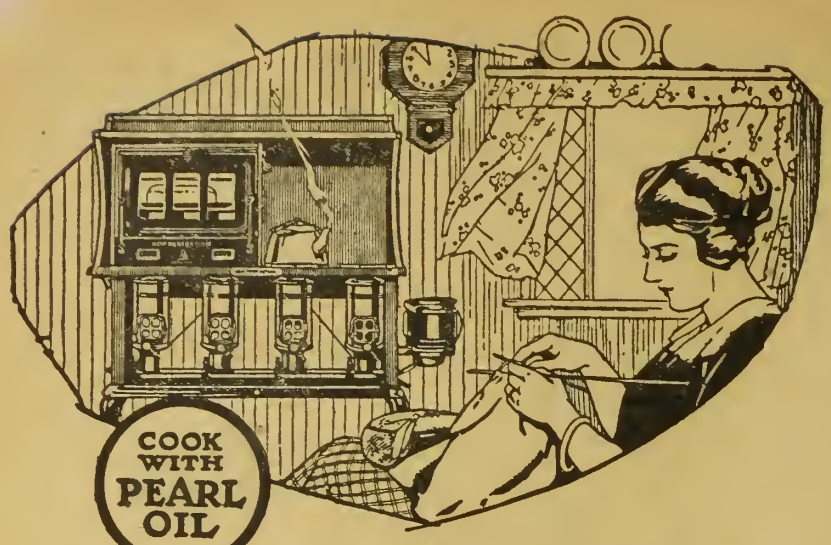

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A New Perfection Oil Cook Stove means kitchen comfort and convenience. Ask your friend who has one. Used in 3,000,000 homes. Inexpensive, easy to operate. See them at your dealer's today.

Keep Your Kitchen Cool

Your kitchen is always cool and comfortable even in the hottest weather if you use a New Perfection Oil Cook Stove.

No smoke or odor, no dust or dirt. None of the bother of coal or wood. All the convenience of gas. Better and more economical cooking all the year round.

In 1, 2, 3 and 4 burner sizes, with or without ovens or cabinets. Ask your dealer today.

STANDARD OIL COMPANY
(California)

NEW PERFECTION OIL COOK STOVE

California State Fair
At Sacramento, August 31st to September 8th, inclusive
Make the War Time Fair the Biggest Ever
United States Government Food Training Camp
Show What You Have Done. Learn What Others Have Done
We Need More Soil Products—Better Livestock
Exhibit Your Best to Help Solve the Nation's Food Problem
The key notes of the 1918 California State Fair
PATRIOTISM - PROFIT - PLEASURE
Great Display of Vocational Work by School Pupils
Over 500 Prizes, divided between City and Rural Schools for Domestic Arts and Science, Manual Training and Home Gardens. Greatest incentive ever offered to California Boys and Girls.
Better Baby Conference—Lectures and Demonstrations Each Day
Largest Livestock Show in the West Over $40,000 Offered in Premiums
Education and Amusement Combined
Bigger and Better Poultry Show Special Pet Stock Show
Displays of Horticulture, Agriculture, Viticulture, Forestry, Dairy Products, Dairy, Farm and Road Machinery, Tractors, Etc.
Daily Program of High Class Amusements—Night Horse Show—Harness and Running Races—A Tent City of Carnival Attractions.
New Agricultural and Horticulture Building
Great Annual Band Concert Open to Entire State
Be Sure and Visit the State Fair and Mather Aviation Field
Send For Premium List
Geo. C. Roeding, President Chas. W. Paine, Secretary
Sacramento, California.

Bean Blades! Bean Blades!

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Now is the time to buy BEAN BLADES
We can furnish you with 5/16 x 5" x 6 foot blades at $12.00 per pair
f. o. b. Los Angeles

Killefer Efficiency

Dealers Write for Discount

The Killefer Manufacturing Company
2209-21 Santa Fe Ave. Los Angeles

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

Household Department

SMILE

When your nerves are all a-jar
Try to smile;
When you straphang in a car,
Try to smile;
When the war news isn't bright,
And the streets are dark at night,
And your last man's gone to fight,
Try a smile!

You can't change the thing, of course
With a smile,
But it does not make it worse
If you smile;
And it seems to help your case,
For it brightens up the place;
For it somehow rests your face
Just to smile!
—Edinburgh Rotary Bulletin

GREAT GRANDFATHER'S BROADAXE

By C. A. Stephens in Youth's Companion

WE KNOW that our broadaxe is at least a hundred and thirty years old, for it was among the tools that my great grandfather brought with him from Reading, Massachusetts, when he came to Maine at the end of the Revolutionary War.

Probably it is much older, for it was made in Sheffield, England, and was brought to America in the brig Constant some little time before the colonies rebelled. It has the "dew lip" and other Sheffield marks and rings clear as a bell when you flip the blade.

No tool ever had a busier life. It hewed much of the square timber for the buildings at the old home farm and also the timber for the houses and barns of the neighboring pioneers. For the first 10 or 15 years it was the only broadaxe in the settlement, and whenever anyone had any hewing to do he borrowed it.

It was lost repeatedly, but always turned up. Once it was ploughed under, but was ploughed out the next year, and had to have a new handle. Once, too, it was buried under autumn leaves for an entire winter; and it also went through a barn fire without apparent damage to its fine temper.

When great grandfather died, the old broadaxe passed into the keeping of his son, the old squire. When, as a boy of 12, I first saw the axe, it was badly rusted; it had had ten successive handles, each of hickory or oak, with the side crook for hewing to the line. Handles came and handles went, along with their human handlers, but that old Sheffield axe hewed on; and oh, what a keen edge it would take from a hard grindstone or emery stick; a soft stone would not "touch" it. You could grind all day and wear out the stone, but not that axe. Like all early English axes, it had been a heavy one, but was now worn up nearly two inches. Yet that matchless temper was as prime as ever. It was almost impossible to dull it on dry pine knots or even on nails; it would cut off a nail and show scarcely a trace on the edge.

Even in 1866, when we young folks went home to live at the old farm, the neighbors still borrowed the axe whenever they were building a new barn, house or shed. The old squire always lent it to any and all who wanted to borrow it. Indeed, when we wanted the axe ourselves we generally had to scour the countryside for it. Sometimes it would be gone from the farm for a year at a stretch, since whoever had borrowed it would lend it to others.

Once, I remember, after tracing it from farm to farm, we had to drive to an adjoining town to recover it; and on another occasion we found the axe at an iron foundry where some unappreciative borrower had sold it as old junk.

After that experience we young folks held an indignation meeting and declared that the old axe should not be lent again to anyone on any pretext. We meant to put it away in the attic along with the flax wheel, loom, tin baker and other mementos of our ancestors. For a year or two Addison and Theodora had been deeply interested in collecting family souvenirs; the big attic at the farmhouse had come to be a repository for antiquated articles.

However, we knew that the old squire would never refuse to lend tools to a neighbor, and so Addison proposed that we buy a broadaxe and keep it on purpose to lend. That we did. But the very first time that we lent the new axe it came home with two wide, deep nicks broken out of the blade—spoiled, in fact.

Less than two months after that we had to lend the old broadaxe again, much to the disgust of Addison and Theodore, who had made a bracket for it on a beam in the attic, next to the old queen's arm that great grandfather had carried at Bunker Hill. That happened in the spring. May Day was drawing near, and Theodora and Addison thought of a plan for keeping the old axe at home in the future.

On that day, in our community, we always exchanged May baskets and other compliments of the season with our neighbors. Now, my cousins proposed to leave on May Day morning, on the doorsteps of each of the four principal borrowers of tools at the old squire's, a brand-new broadaxe.

They did not mean it as an ill-natured joke, nor did they have the least notion of stirring up a commotion in our neighborhood. In fact, they thought they were quite generous, for they were rather put to it to scrape enough money together to pay for the axes.

Under cover of darkness on May Day eve, Addison and Theodora left the axes on the doorsteps of our four neighbors—the Murches, the Sylvesters, the Wilburs and the Batchelders. On the wrapper of each axe Theodora had written:

"We hope that this new axe will prove as useful to you as the old one that you have so often borrowed."

It was merely a joke, but never was a joke worse received. Those kind neighbors felt themselves insulted. Indignation reigned from the moment they read the inscription and undid those packages! And it was perfectly obvious to them where the axes came from.

"Ruth," the old squire said to grandmother at the supper table the next evening, "do you know of anything that we have said or done to offend the Murches?"

"Surely not," Grandmother Ruth replied. "Why?"

The old gentleman stared at her reflectively for a moment before he answered. "Well," he said at length, "perhaps I am mistaken. But this afternoon when I drove down past their place, from the mills, Murch was out in his garden near the road, and I pulled up to pass the time of day. He hardly replied, and when I went on to speak of the weather he gave a short laugh and walked off without responding. I thought it a little strange and wondered what had come over him that he should act so."

Wholly unable to throw light on the subject, grandmother merely said, "Perhaps he wasn't feeling well."

The Cultivator Patterns

8937—Ladies' Shirtwaist. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. The V-neck is finished with a narrow roll collar of white.

8954—Girls' Dress. Cut in sizes 4, 6, 8 and 10 years. The dress has a two piece skirt.

8962—Ladies' One Piece House Dress. Cut in sizes 36, 40 and 44 inches bust measure. The dress buttons from neck to hem.

8947—Ladies' Waist. Cut in sizes 36, 38, 40 inches bust measure. The waist is all in one piece, with full length kimona sleeves.

8965—Boys' Dutch Suit. Cut in sizes 2, 4 and 6 years. The separate straight trousers are buttoned to the waist through a band.

8930—Ladies' House Dress. Cut in sizes 36, 38, 40, 42, 44 and 46 inches bust measure. The drese can be quickly put on, for it fastens like a coat, in double-breasted style.

8967—Ladies' Two Gored Gathered Skirt. Cut in sizes 24, 26, 28, 30, 32 and 34 inches waist measure. The back gore is gathered across the slightly raised waistline.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

PATTERN DEPARTMENT
CALIFORNIA CULTIVATOR
Los Angeles.

"Maybe," the old squire replied doubtfully, and the matter was dropped; but I noticed that Theodora and Addison looked uneasy.

The next morning there was much greater need of explanation. When the old squire, who was an early riser, opened the front door, there lay three heavy packages—three of those broadaxes that the recipients had secretly and no douht scornfully returned during the night.

"We seem to have had a mysterious present of broadaxes last night," the old squire remarked at the breakfast table. "Can anyone explain it?"

Addison glanced at Theodora, and, concealment now being worse than useless, they immediately entered on a labored explanation of the whole affair. The old squire listened with a whimsical, not wholly pleased, smile, but made no comment. Theodora and Addison soon excused themselves; and before the rest of us had left the table, we saw Theodora hastening through the yard outside. She had put on her hat and evidently intended to make a hurried visit to the neighbors.

It must have heen a disagreeable experience; but she and Addison had resolved to exonerate the old squire and grandmother.

"What did you say to them?" I asked her afterwards.

"Oh, I told them it was just a May Day prank, that we hadn't intended to injure their feelings, and that grandfather and grandmother knew nothing about it."

"And what did they say?" I quizzed.

"They didn't say much, if anything," Theodora said, with a wry smile.

But the neighbors overlooked the incident, and soon good feeling prevailed again. I should hardly have remembered the incident except for a call I received about a week ago from Charlie Sylvester, a youthful neighbor.

"I'm going down to Bath to work in the shipyards," he announced. "The government wants carpenters for the new ships, to beat the U-boats. I know how to handle tools a little, and I guess I can- help get those ships ready. I'm going tomorrow. And father says you've got an old broadaxe that was a keen cutter. Would you let me take it and grind it up, to hew with?"

"Certainly!" I exclaimed. "That or anything else I have that will help in this great emergency."

So that old Sheffield axe, which has served so many generations, is now at a Bath shipyard—still hewing, doing its "bit" to beat the German submarines.

SCOUT RALLY SONG

(Tune of "Keep the Home Fires Burning.")

Scouts have heard the call for Freemen
To go forth and crush the Hun.
On the fields of France in battle,
They will fight till Vict'ry's won.
Scouts at home, we must not falter,
"Carry On" and do your share,
Put your shoulder 'neath the burden,
Help to feed Scouts "Over There."

Chorus:

Keep the Scout Troop going
While the "Big Job's" growing
Taking thousands from our ranks
Away from home.
Gone to fight for Freedom,
Scouts will help to feed them,
Digging gardens, selling bonds,
Till our boys come home.

—A. H. Broido, in Boy's Life, the Boy Scouts' Magazine.

An officer at Spartanburg has been court martialed and dismissed from the army for bullying his men. No wonder the Teutonic officers despise an army where mere privates have rights which officers are bound to respect.

Food

A SHELFFUL OF RELISHES

Home made sauces from home grown fruits and vegetables are first aids in serving cold meats or stretching the roasts. Every well stored pantry should have its shelf of relishes; chutney to serve with chicken, corn relish with fish, cucumber catsup with steak, spiced grapes or currants with cold meats.

Apple Catsup

One quart apple sauce, one teaspoon ginger, one teaspoon cinnamon, one teaspoon cloves, one pint vinegar, one teaspoon pepper, one teaspoon mustard, one teaspoon onion extract, two teaspoons salt.

Simmer slowly until thick, bottle and seal. A similar catsup can be made from plums or grapes, and spiced to taste. Sorghum or molasses may be added if a sweet sauce is liked.

Cucumber Catsup

One dozen large cucumbers, one quart vinegar, one tablespoon salt, one-fourth teaspoon cayenne.

Gather cucumbers before the sun strikes them and keep in a cool place until used. Peel and grate the cucumbers and drain off the water. Heat vinegar and spices to boiling point; pour at once over the grated cucumber, bottle and seal. Cucumbers bottled in this way retain their freshness and make a particularly good sauce for steak.

Spiced Currants

Five quarts currants, one pint vinegar, one and one-half pounds sugar, one and one-half pounds corn syrup, one teaspoon cloves, one teaspoon cinnamon, one teaspoon allspice.

Combine ingredients and cook one hour. Seal in jars.

Indian Chutney

Two dozen ripe tomatoes medium size chopped, six onions medium size chopped, three red peppers chopped, three green peppers chopped, one dozen tart apples chopped, one pound seedless raisins, one cup celery cut fine, two quarts vinegar, one and one-half cups sugar, one and one-half cups corn syrup, salt.

Combine the ingredients and cook until all are soft and the chutney is thick. Pour into hot sterile jars and seal them.

Corn Relish

Five pints sweet corn cut from cob, three green sweet peppers, two red sweet peppers, four pints vinegar, four pints finely chopped cabbage, one-half pound sugar, one-half pound corn syrup, one-fourth pound mustard, two tablespoons salt.

Seed and chop peppers. Mix all ingredients together and cook until corn is soft, about 25 minutes. Seal air tight in hot, clean jar. Serve with

DISTRACTIONS

"Why do you always dine where there's an orchestra?"

"As a matter of precaution. Sometimes the music helps me to forget the food, and sometimes the food helps me to forget the music."

NATURAL RESULT

"Well, is your war garden coming up to the scratch?"

"No, but my neighbors' chickens are."

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Los Angeles Market

Los Angeles, August 14, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.
Cal. Extra. Creamery 50

Dairy Exchange price past week on extras.

Aug.	7	8	9	10	12	13
'18 ...	50	50	50	48	48	50

Rcts. wk. ending August 13, 95,970 lbs.

CHEESE

Brokers prices:
California fresh, lb. 27
Eastern Daisies 29
Oregon triplets 27½

EGGS

Exchange quotations. Prices to retailers 2 to 3 cents higher.
Fresh extras 49
Case Count 47
Pullets 46

Dairy Exchange prices past week on fresh extras.

Aug.	7	8	9	10	12	13
'18 ...	48	48	48	48	48	49

Rcts. wk. ending August 13, 1050 cases.

POULTRY

We quote to producers.
Broilers .....30@33
Fryers 31
Hens, small, 20@22; heavy 25
Colored 25
Ducks, lb., 20; ducklings .....22@25
Roasters 31
Roosters, old 17
Turkeys .....28@33
Geese 15
Rabbits, live, 17@18; dr. 40

LIVESTOCK

We quote cwt. f. o. b. L. A.
Corrected Wednesday morning, August 14, by the Cudahy Company.
Cattle—
Beef steers, av. 1000-1100 lbs. 12.00
Heifers, good 9.00
Cows, good 8.50
Veal Calves A10.00
Canners .....5.00@6.00
Hogs —
Av. 150 lbs. 17.50
Av. 175-225 lbs. 18.50
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers 12.50
Ewes 11.50
Lambs 16.00
Yearlings .....11.00@11.50

POTATOES

Wholesale selling prices:
New, cwt. .....2.75@3.00
Sweet, lb. .....5½@6

ONIONS

Wholesale selling price, cwt.:
Brown, cwt. 3.00
Garlic 10
White, cwt. 3.00

VEGETABLES

Wholesale prices:
Artichokes, doz. 1.10
Jerusalem, lb. 7½
Beans—Wax, lb. .....6@7
Ky. Wonder .....6½@7
Limas, lb. 7
Beets, sk. 2.00
Cabbage, lb., 3½@4; sk. 3.50
Carrots, doz. 30
Corn, sugar, iug. .....85@90
Cucumbers, lug .....60@65
Egg Plant, lb. .....6½@7
Horseradish, lb. 15
Lettuce, doz. .....30@35
Leeks 35
Mint, doz. 40
Okra, lb 12
Onions, green, doz. .....25@30
Peas, Tel., lb. .....13@14
Peppers, Chili, lb., 6; Bell 10
Parsnips, doz. 40
Parsley, doz. 20
Radish, doz. 30
Rhubarb, C. W. bx., 1.15; Strawberry 1.30
Squash — Summer, iug .....50@65
Tomatoes, cr. 85
Turnips, doz. 40
Watercress, doz. .....35@40

FRUITS

Wholesale prices:
Apples, new, lug 1.35
W. Astrachan, bx. 2.50
Apricots, lug .....1.25@1.45
Bananas, lb. .....6½@6¾
Cantaloupes .....2.00@2.25
Tip Top 2.25
Rocky Ford .....1.25@1.50
Crabapples, lug .....1.35@1.50
Figs, bx. 1.00
Grapes, Malagas, lug. 2.25
Seedless 2.50
Nectarines, lug 2.50
Peaches, Freestone 1.25
Clingstone, lug 2.25
Pears, Bartletts, bx. 3.00
Plums, lug .....2.50@2.75
Satsuma, lug .....2.00@2.50
Strawberries, tray 1.10
Watermelons, lb. 2½

CITRUS

Lemons, packed, 6.50; loose 5.25
Juice 3.50
Orange — Valencias 8.25
Grapefruit 3.50

BEANS

These are prices made by wholesaler to retailer:
Lady Washington 13.00
Limas 13.50
Pinks 8.00
Manchurian Reds 8.50
Baby Mex. 9.00
Garbanzos .....9.25@9.50
Small Whites 13.00
Blackeyes 8.50
Teparies .....8.50@9.50
Lentils 24.50
Mex. Red 8.75

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....18@20
Amber extracted 16
Fancy white comb, per case 6.50
Comb lt amber, per case .....5.00@6.00
Beeswax, lb. .....32@34

HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A.:
Tame Oat .....26.00@28.00
Volunteer Oat .....13.00@15.00
Wheat .....23.00@26.00
Barley .....23.00@26.00
Alfalfa .....19.00@22.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

Alfalfa hay $25.50 car lots f. o. b. L. A.; $23.00 f. o. b. common shipping points, taking $2.50 carload rate to destination.

GRAIN AND FEEDSTUFFS

Prices on Local Grain Exchange:

	Bid	Asked
No. 1 bright feed barley	$2.60	$2.65
Milo maize, local	.....	3.50
Oat middlings	.....	36.00

San Francisco Markets

San Francisco, August 13, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:
Extras 52
Prime firsts 49

Prices Extras past week and year ago:

Aug.	6	7	8	9	10	12
'18 ...	52	52	52	52	51½	52
'17 ...	43	43	43	43½	42½	..

Rcts. wk. ending August 12, 336,300 lbs.

CHEESE

Dairy Exchange quotations:
Cal. Flats .....24½@27½
Ore. Y. Am. 27½
Jack Cheese, full cream 28

EGGS

Dairy Exchange quotations:
Extras 52
Firsts 46
Selected Pullets 49½

Prices Extras past week and year ago:

Aug.	6	7	8	9	10	12
'18 ...	50	51	50½	50½	50½	52
'17 ...	43½	43½	43½	42	41½	..

Rcts. wk. ending August 12, 9208 cases.

POULTRY

We quote to producers, lb.:
Per lb.: Large hens, 29@31; Leghorn hens, 26@29; broilers and fryers, ¾ to 1¼ lb., 40; 1½ lbs., 37@38; 2 lbs., 36; 3 lbs. and over, 35; old roosters, 20@21.
Ducks, live, 27@28.
Geese, 25.
Belgian hares, live, 15-17.
Squabs, doz., 3.50@4.00.

LIVESTOCK

Prices gross weight:
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.

Steers, lb., 10@12; thin, 8@9; cows and heifers, 7@8¼; thin, 4@5½; calves, 8@11.

Sheep—Per lb. gross weight; Unshorn wethers, 11@11½; ewes, 9½@10; lambs, yearlings, 12@12½; milk, 14@14½.

Hogs—Hard grain fed, weighing 100 to 140 lbs., 17¼@17½; 140 to 300 lbs., 17¾; 300 to 400 lbs., 17¼.

POTATOES

Wholesale selling prices at wharf, cwt.:
River, new, cwt. .....2.25@2.50
Sweets, lb. .....4@5

ONIONS

Wholesale selling price on wharf, cwt.:
Australian .....2.25@2.40
Garlic, new, lb. .....12½@15

VEGETABLES

Wholesale selling price:
Beans, String, lb. .....5@7
Limas, lb. .....5@7
Corn, green, sk. .....1.50@2.25
Cucumbers, lug .....1.00@1.25
Pickling, lb. .....3@5
Egg Plant, lug .....50@60
Lettuce, doz. .....15@20
Okra, lb. .....9@10
Onions, green, bx. .....65@75
Peppers, Bell, lug, 40@50; Chili .....25@50
Peas, lb. .....8@10
Squash — Summer, lug .....75@1.25
Italian, lug .....50@75
Tomatoes, lug .....50@90

FRESH FRUITS

Apples, Gravenstein .....2.00@2.75
Red Astrachan .....1.25@2.00
Apricots, small lug .....85@1.25
Avocados, doz. 2.50
Bananas, lb. .....7@7½
Berries — Ch.: Strawberries, 7.00@10.00; blackberries, 5.50@8.00; loganberries, 7.00@8.00; raspberries, 7.50@11.00; huckleberries, 15@16.
Cantaloupes — Turlock ponies, 1.25@1.50; standard, 1.50@1.75; flats, 60@75; casabas, doz., 1.75@3.00; Persians, lb., 2½@3.
Crabapples, small bx. .....50@60
Fig, bx.: Sonoma, double layer .....1.50@1.75
Grapes, Seedless, cr. .....1.00@1.25
Black Prince .....1.00@1.25
Malaga .....1.50@1.75
Tokay .....1.50@1.75
Nectarines, cr. .....1.25@1.75
Peaches, bx. .....90@1.10
Pears, Bartlett, bx., 1.25@2.75; ton, 30.00; culls, ton, 18.00.
Plums — Cr.: Burbank, Wickson, Diamond and prunes, 1.25@1.50; loose, bx., 65@85.
Pineapples, doz. .....4.50@5.00
Watermelon, lb. .....1½@2

CITRUS

Lemons, bx., fy., 7.00; ch. 5.00@6.00; standard, 4.00@5.00; lemonettes, 3.50@4.50; oranges, 6.50@7.50; grapefruit, 3.00@6.00.

BEANS

Limas .....13.10@13.25
Bayous .....7.75@7.90

Jobbers' prices, cwt., recleaned:
Small Whites .....Nominal
Large Whites .....Nominal
Mexican Reds .....7.75@7.90
Blackeyes .....7.00@7.20
Pinks .....7.00@7.15
Red Kidney .....11.75@12.00
Cranberry .....Nominal
Teparies .....8.50@8.75

DRIED FRUITS

Raisins: Associated prices 1918 are:
Muscats: Packages seeded, fancy, 36-16s, 9.625; fancy, 48-12s, 7.75; choice, 36-16s, 9.125; choice, 48-12s, 7.375. Bulk seeded: 25-lb. Bakers, 8.00; 25-lb. fancy, 8.85.

Thompson Seedless; packages recleaned, 48-16s to case, 9.90; bulk, recleaned, 36-12s to case, 8.00; package, recleaned, 25-lb. boxes, 9.25. Sulphur bleached — northern stock: Bulk, 25-lb. boxes, choice, 10¼; bulk, 25-lb. boxes, fancy, 10¾; bulk, 25-lb. boxes, extra fancy, 11¼. Soda dipped — northern stock — Bulk, 25-lb. boxes, 10.

Loose: 1-crown, 25 lb. boxes, 8½; 2-crown, 25 lb. boxes, 7½; 3-crown, 25 lb. boxes, 8; 4-crown, 25 lb. boxes, 8¾.

Layers: 3-crown, 20 lb. boxes, 1.85; 3-crown, 20 1-lb. trays to box, 2.00; 4-crown, 20 lb. boxes, 2.10; 6-crown, 20 lb. boxes, 2.95; 3-crown, 10 lb. boxes, 1.05; 4-crown, 10 lb. boxes, 1.20; 6-crown, 10 lb. boxes, 1.65; 3-crown, 5 lb. boxes, .65; 4-crown, 5 lb. boxes, .70; 6-crown, 5 lb. boxes, .90.

Sun-Maid clusters, 20 1-lb. cartons to box, 2.35.

Imperials, 4 5-lb. cartons to box, 3.40.

Vineyard run, 50 lb. boxes, 3.90; 100 lb. boxes, 7.50.

Sultanas. Packages, recleaned, 48-16s to case, 9.65; bulk, recleaned, 25-lb. boxes, 9.00.

Peaches — California Peach Growers quotes opening prices for 1918 crop f. o. b. factories California. Prices guaranteed to December 31.

Bulk basis and boxes unfaced 1 and 2 cents more.

	Practically Peeled	Yellows (Old style)	Muirs (Old style)
Standard	12⅞c	11¼c	11⅜c
Choice	13⅜c	11¾c	11⅞c
Fancy	14⅜c	12½c	12⅞c
Ex. Fancy	15½c	13¼c	14c
Slabs		10¼c	

Prunes and Apricots. The Prune and Apricot Growers' Association have named following prices on apricots:
Standards 9½
Choice 13
Extra Choice 14½
Fancy 16
Extra Fancy 17½
Extra Moorparks 19
Slabs 11

Cash on delivery price on all grades will be 8 cents with the exception of standards and slabs on which it will be 6 cents.

Prunes: The government will take all the 50-60; 60-70; 70-80 sizes. The quotations sent to the trade last night are as follows:

The bulk prices will be:

Sizes:	Price per lb.
20-30	17
30-40	.....10¾
40-50	10
50-60	9
60-70	9
70-80	.....8¾
80-90	.....8¼
90-100	.....7¾
100-120	.....4¾
Above 120	.....4¼

One cent per pound, and one and one-fourth cents per pound will be added for 50 and 25-lb. boxes.

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....17@20
Amber extracted 16
White comb, cs. .....4.50@6.00
Light amber comb, cs. .....3.50@4.00
Beeswax .....32@34

HAY

Under date of August 10, Scott, Magner & Miller says:

Receipts past week, 2509 tons. The market has been heavily stocked throughout the week, demand has been exceedingly light and it has been only with the greatest of difficulty that the arrivals have been removed from the tracks. There has been no export trade to speak of for some time, which, together with the light demand from interior sections as well as the Coast districts, tends to make it difficult to handle the receipts to advantage. Considerable alfalfa has arrived during the week from the river districts as well as from the interior. Owing to the high range of prices demanded on this commodity movement is slow. It is reported, however, that owing to lack of water in many districts and trouble with the grasshopper pest in others that the later cuttings of alfalfa are liable to be short of former estimates. Straw seldom appears on the market, there being practically no demand whatever in the city for it. Some straw has been purchased in country districts for feeding purposes but in most cases at a very low range of prices.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market — for prices to consumers charges of cartage, commission and handling must be added according to conditions:

Fancy Wheat Hay (large 5 wire bale) .....26.00@27.00
No. 1 Wheat or Wheat and Oat Hay .....23.00@25.00
No. 2 Wheat or Wheat and Oat Hay .....20.00@22.00
Choice Tame Oat Hay .....24.00@26.00
Other Tame Oat Hay .....21.00@23.00
Wild Oat Hay .....19.00@23.00
Barley Hay .....19.00@23.00
Alfalfa, first cutting .....16.00@20.00
Alfalfa, second cutting .....22.00@24.00
Stock Hay .....18.00@21.00
No. 1 Barley Straw, bale .....50@80

Barley—New No. 1 feed, 2.37½@2.45 per cental; milling, 2.50@2.60.

GRAIN

Wheat: Base price for 1918 crop common white hard to farmers is $2.20 per bushel of 60 pounds, delivered in bulk at terminal warehouses. For sacks add 9 cents, less tare for weight of same.

Barley—New No. 1 feed, 2.40@2.55 per cental; milling, 2.55@2.65; off grades quoted down to 2.45.

Oats: Red feed, 2.60@2.70 per cental; do. seed, 2.75@3.00.

Corn: Nominal; none offering.

SEEDS

Prices in round lots, lb.:
Millet, recleaned .....5@5½
Flax .....8@8½
Hemp .....5½@6
Rape .....2½@5

Citrus Fruit Market

Los Angeles, August 14, 1918.

Oranges have shown poor keeping quality which has caused some sales at low prices but good fruit has commanded long prices.

The terrific heat of the Eastern portion of the country has caused lemons to go to exceptionally high prices. Pittsburg especially has given long prices reaching from $10.00-$13.00.

Shipments

Shipments of citrus fruits to date since November 1, 1917: Southern California; oranges 12,851 cars, lemons, 4849, total 17,700. To same date last season, oranges 35,762, lemons 7147, total 42,909. Central California this season; oranges 2536, lemons 115, total 2650. Last season to same date; oranges 4665, lemons, 164, total 4819. Northern California; oranges 203, last year same date 845.

AT THE AUCTIONS

August 7

New York: 8 oranges, 1 grapefruit, 2 lemons. Market strong and higher. Val. 6.90-9.70, lem. 4.70-7.40, Nav. 7.15, grapefruit 2.85-6.15.

Philadelphia: 4 cars. Val. 4.85-7.65, lem. 4.95.

St. Louis: 1 Val. 2 lem. Val. 7.15-8.30, lem. 7.35-8.05.

Boston: 3 oranges, 1 lem. Val. 3.90-8.25, lem. 7.35-7.90.

August 8

New York: 6 Val., 1 lem. Val. 6.40-9.50, lem. 5.80-6.65.

Boston: 4 cars. Val. 6.75-8.15, lem. 6.50-7.45.

Philadelphia: 2 cars. Val. 5.75-8.40.

August 9

New York: 19 oranges, 1 grapefruit, 1 lem. Val. 4.15-9.40, lem. 7.20-7.55, grapefruit 3.60-6.10.

St. Louis: 1 orange, 3 lem., 8 Val., 8.40, lem. 7.35-8.00.

Cleveland: 1 mixed car, 1 lem. Val. poor condition. Val. 5.95-6.20, lem. 6.35-7.55.

August 12

New York: 16 oranges, 3 lem. Val. 5.00-9.85, lem. 6.05-8.05.

Cincinnati: 1 orange, 2 lem. Val. 6.55-7.50, lem. 8.00-8.50.

Boston: 3 oranges, 1 lem. Val. 7.35-8.15, lem. 3.00-7.45.

St. Louis: 1 oranges, 4 lem. Val. 6.45-7.75, lem. 6.20-7.90.

Pittsburg: 2 oranges, 3 lem. Higher. Val. 6.20-8.40, lem. 10.00-12.05.

Philadelphia: 4 oranges, 2 lem. Val. 6.75-8.95, lem. 5.20-9.00.

August 13

New York: 11 oranges, 2 oranges and grapefruit. Val. 6.85-9.05, grapefruit 3.10-4.90.

Pittsburg: 2 lem. 9.35-13.00.

Boston: 2 oranges, 9 Val. 7.00-8.25.

Philadelphia: 2 oranges, 1 lem. Oranges higher, lemons lower. Val. 6.20-9.45, lem. 7.10-8.25.

MARKET NOTES

Bureau of Markets of the U. S. D. A. report conditions of canning in truck crops of California as follows: "Snap beans 90 per cent, cabbage 74 per cent, cucumbers 77, peas 70, tomatoes 90. In every case excepting cabbage and peas conditions in California are far more satisfactory than the average in the United States."

Los Angeles reports early crop of shipping tomatoes as much lighter this year than preceding year. Worms have been a serious factor in all tomato growing sections, causing a loss as high as 50 per cent in certain Earliana districts. In San Fernando Valley the blight has been serious.

Cauliflower transplanting especially of early varieties is under way in truck farms around Los Angeles. The planting will not be more than 65 per cent of last year.

The apricot season has closed with prices running much lower than have been satisfactory to the producers.

Remarkably fine red nectarines are coming in and command around six cents.

New Stockton Burbanks are selling at the Los Angeles market at $3.00, with White Rose running at $2.75 though exceptional quality sometimes demands $3.00.

Watsonville Red Astrachan and Alexanders and Sebastopol Gravensteins are commanding from $2.25-3.00 a box in Los Angeles market.

Yucaipa and Beaumont Delicious apple growers are contracting future delivery $1.15-1.25.

Fine large Elbertas from Central California are commanding $1.50-1.65 lug boxes.

High quality Sacramento River Bart-

letts are commanding $1.25-1.50 lugs, $3.00 packed box.

The United States food administration has issued a ruling that there shall be no trading in new crop of oriental beans until September 1.

Georgia peaches are practically all shipped and Eastern markets are depending on Texas and Arkansas Elbertas.

Colorado shipments of cantaloupes will be practically the same as last year.

California shipments of deciduous fruits to date are nearly 5000 cars.

The Apple Shippers' Association of America is meeting in Philadelphia this week.

The potato crop of the country is estimated this year at 405,000,000 bushels against 402,000,000 last year.

PARTIAL LIST CALIFORNIA FRUIT AND VEGETABLE SHIPMENTS

From post card reports to the Los Angeles branch of the bureau of markets, report is made of the following shipment of cars of products from California for the week ending August 12: Apples, 20; apricots, 22; cabbage, 6; cantaloupes, 253; casabas, 3; dried apricots, 13; dried beans, 40; dried potatoes, 3; dried prunes, 15; garlic, 6; grapes, 275; lettuce, 2; mixed berries, 16; mixed fruit, 82; mixed vegetables, 33; mixed fruit and vegetables, 48; mixed dried fruit, 2; nectarines, 4; onions, 59; peaches, 887; pears, 489; peppers, 3; plums, 322; potatoes, 167; raisins, 114; strawberries, 1; tomatoes, 23; watermelons, 129.

MAPLE SUGAR AND SYRUP PRODUCTION

The maple sugar crop of 1918 in the 13 states which include nearly all the producing region, was 13,270,900 pounds and the syrup production was 4,905,200 gallons. The total of sugar and syrup, counting one gallon of syrup as equivalent to eight pounds of sugar, would be 52,512,500 pounds of sugar. The production in 1917 was 10,838,650 pounds of sugar and 4,286,100 gallons of syrup, both being equivalent to 45,127,400 pounds of sugar. The 13 states covered by this report produced about 99 per cent of the total maple sugar and syrup in the census year, 1909.

The principal region of production extends from northwestern Ohio through New York to Vermont and includes parts of Maine, New Hampshire, Massachusetts and Pennsylvania. Outside of this region there is also production of importance in the mountain country beginning with the southern counties of Pennsylvania and extending through western Maryland into scattered localities in West Virginia; also in parts of Michigan, Wisconsin and Indiana.

The increased demand and higher prices for maple sugar and syrup helped to cause a larger number of trees to be tapped in 1918 than in 1917, or even in 1909. A total of 19,298,200 trees were tapped in 1918, of which 15,616,000, or 81 per cent, were in the four states of Vermont, New York, Ohio and Pennsylvania.

Weather conditions in the northern part of the sugar region, namely, in New England, New York, Pennsylvania and Michigan, were favorable. There were cold nights alternating with warmer days. In Maine, however, snow delayed the beginning of the sugar making season, while in Michigan the season also was rather short. In New York, however, conditions were reported as ideal for a good flow and a high quality of sap. In Ohio and Indiana the season was relatively long, but there was not enough alternating of freezing nights with thawing days for the best conditions of sap flow either as to quantity or as to quality.

C. P. CLAUSEN TO ATTEND OFFICER'S SCHOOL

It will be of considerable interest to friends of C. P. Clausen to know that he has been designated to attend the training school for officers of the coast artillery. Clausen seems to have been a marked man in his company. Though only enlisted ten days, he was highly commended by his commanding officer for general appearance of self and outfit. After a month he was advanced to corporal. At the end of the second month he, with another member of the company, were picked as fit subjects for officers of artillery, and have been sent to Fortress Monroe, Virginia, for training. Three members of the staff of the insectary division are now with the colors and all have either received or are in line for commissions.

U. S. GRAIN STORAGE CAPACITY

That country elevators provide more than half of the nation's total grain storage capacity is shown by investigations of the United States food administration into facilities for taking care of this season's crops. The amount and distribution of grain storage in the United States is indicated in the following summary: Country elevators, 20,642, 527,861,855 bushels capacity; additional country elevators, 959, capacity not known; terminal elevators, 399, 250,708,060 bushels capacity; mills, 6961, 150,177,939 bushels capacity. Total, 28,962, 928, 747,854 bushels capacity.

Cities having a total storage capacity exceeding 100,000,000 bushels are Minneapolis, Chicago, Kansas City and Philadelphia. It will be observed that the grain storage units of the United States have a capacity equivalent to more than nine bushels for every person. These facts and the knowledge that there are additional storage facilities on farms show the practicability of building up grain reserves, especially of wheat, against future food needs. The food administration also plans to build up grain reserves in France in order to render less serious any temporary interruption of shipping.

ITALY COMMANDEERS LABOR FOR FARMS

To prevent losses of food likely to occur during the harvest season through lack of farm labor, Italy has issued a decree of far-reaching scope. The following classes are subject to be called for work on farms during the harvesting and threshing season:

Citizens of both sexes, between the ages of 15 and 65 who are cultivators of land or agricultural laborers and who in addition to working their own land can be of help on land belonging to others.

Persons accustomed to agricultural work even if they have abandoned such work within the last five years.

Persons who though not accustomed to agricultural labor are physically fit for such work or being out of work are considered capable to undertake it.

The foresight which Italy has shown in solving her agricultural problems is an additional example of the recognized importance of ample food for maintaining the strength of the nation and winning the war.

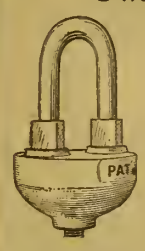
WEATHER CONDITIONS

San Francisco, Cal., August 10, 1918.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	.00	.20	.12	62	50
Red Bluff	.00	.00	.00	100	64
Sacramento	.00	.00	.06	98	56
San Francisco	.00	.00	.01	74	52
San Jose	.00	.00	.00	90	46
Fresno	.00	.00	.00	98	60
San Luis Obispo	.00	.00	.03	80	50
Los Angeles	.02	.11	.00	86	62
San Diego	.02	.02	.00	80	62

Thrift Attack on Fuel Cost a Success

Owing to the Scientific Perfection of the



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A Real Gas Maker That Fits Any Stove and Safeguards Your Comfort

Concentrating the Tremendous Heat Units of Kerosene in a Clean Home Fire

FOR COOKSTOVE OR HEATER, $5.00 PREPAID

Wide Open Written Guarantee

"Simplest Thing in the World" Made Right in Los Angeles

Circular upon Request *Good Agents Wanted*

PREMIER BURNER CO., Los Angeles, Cal.

Home Office and Factory, 246 South Spring Street

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CITRUS TREES

AWARDED THE GOLD MEDAL AT FOUR INTERNATIONAL EXPOSITIONS.

For Productive values, fine quality of fruit and vigorous growth Teague's bud-selected, (pedigreed) properly trained and carefully handled orange and lemon, pomelo and lime trees are the trees to plant. An experience covering a third of a century warrants the assertion that Teague Quality Citrus Trees possess these qualifications in a superlative degree. All the standard commercial sorts, and garden and ornamental varieties; the largest assortment of citrus trees in America. . . . We invite correspondence from intending planters. . . . Consultations on citrus planting by appointment. 1918 Price list just out; send for a copy.

The R. M. Teague Citrus Nurseries

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Address----------

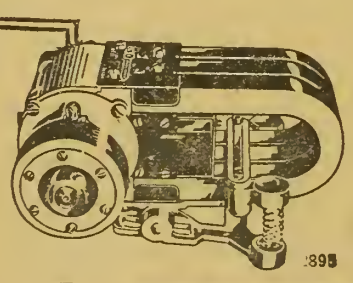
IN selecting a lighting system, you want powerful, steady light—instantly available without complicated electrical devices to maintain and give trouble.

With a K-W Lighting Outfit there is *no* storage battery to sulphate or short circuit or need weekly attention, whether you are using your lights or not. There is *no* commutator or brushes to burn out—*no* complicated cut-out to go wrong, *no* delicate ammeter or voltmeter to watch or become inaccurate through jolts and jars. The K-W *needs no* attention except for an occasional oiling. There is *no* upkeep expense.

A trouble proof, low tension K-W Magneto or generator furnishes the current. Voltage and current output is automatically regulated without governor or other device. The three bar generator furnishes current for a trouble light and two 1600 candle power headlights; the four bar generator for two 2000 candle power headlights and trouble lamp.

The K-W Lighting Outfit consists of a generator, two parabolic headlights, wire, switch, bulbs and trouble lamp. It can be belt or friction driven and is provided with mounting to fit *every* tractor.

The K-W Lighting Outfit gives a steady, powerful light, at a moment's notice, when engine is running. Should you ever require light at any other time, a hand flash lamp will give you all the light required. Surely you don't want to put up with a lot of complicated regulating devices, storage batteries, delicate meters, etc., for such an occasion. Remember, with a K-W there is no maintenance expense.



Write today for further details, prices, etc., giving make and model of your tractor.

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1895 Chester Ave CLEVELAND, OHIO. U.S.A.

NO STORAGE BATTERY—NO CHARGING
NO DELICATE AMMETER OR VOLT METER
NO MAINTENANCE EXPENSE

Holding Up the Nation's Defense

The telephone played a tremendous part in this Nation's mobilization for war. It continues vital to the Government's program.

At the same time it has remained at the service of the whole people whose demands upon it grow apace with that of the Government.

The public is entitled to the best service that it is possible to render. But the public has a partnership in the responsibility for good telephone service.

It takes three to make any telephone connection: the person calling, the company, and the person called. Without the cooperation of all three the service suffers.

The telephone company can make the connection, but no words can be heard at one end of the line which are not properly spoken into the transmitter at the other. The relation between the speaker and the hearer is the same as the relation between the orator and his audience. It cannot be maintained if the orator turns his back to the listeners or if the audience is inattentive.

Telephone traffic must be kept moving. Speak distinctly—answer promptly—and release the line as quickly as possible. Don't continue reading when the bell rings.

These seem little things to ask the individual telephone subscriber, but when the individual is multiplied by millions all over this country, it is easy to see how important it is that *all* should cooperate.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES
One Policy *One System* *Universal Service*

BEAN THRESHERS THE TWO STANDARDS

Built Especially for California Conditions

THE FARQUHAR VIBRATOR SEPARATOR

Guaranteed by "The House of ARNOTT"
Ask The Grower Who Owns One
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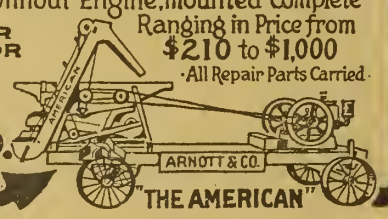
Past the Experimental Stage
Eleven different models, with or without Engine, mounted complete
Ranging in Price from
$210 to $1,000
All Repair Parts Carried



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DEALERS EVERYWHERE

Money Maker Cutters for the West

A good many carloads of Money Maker Cutters are coming to the Coast this year! They will be distributed through reliable representatives in Oregon, California, Washington and Idaho. Don't buy before you investigate the

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Safe Silage Cutters

Patented safety yoke *protects* the *operator.* Patented cushion drive protects the machine. Light draft—sizes from 4 H. P. up, that can be run with *your* gas engine. Force-feed. Throws and blows—fills the highest silo. Cuts dry feed, too.

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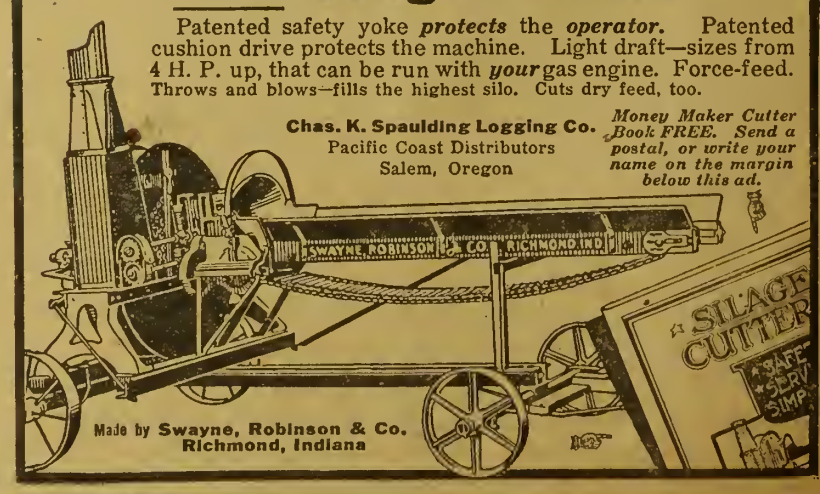

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Richmond, Indiana

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — August 24, 1918 — No. 8

Some Folks at the State Fair

A Simplified Tractor Operated Like an Automobile is Entirely Practicable for a Woman to Handle

As IN England, the tendency is growing in this country for women to help make up the deficiency in farm labor. They can do so to very great advantage where a machine like the YUBA tractor is employed. It is so simple and easy to operate, so seldom needs repairs, so responsive to the turn of the wheel that women are finding it suitable to their strength.

The YUBA 12-20 does the work of twelve horses. One woman can save the labor of several men, using the tractor. Farm labor decreases a half where a tractor is used instead of horses. There's less cooking, less housework, less chores to do where the tractor is used. It is a healthy occupation, and a most profitable one.

YUBA model 12-20 tractors are ready for immediate shipment. They are ready for your fall plowing, for discing, for hauling, for any work where power is needed.

YUBA 12-20 tractors are made of the qualities of steel that give long service under all kinds of conditions; all kinds of weather; 24 hours a day. They furnish the power, all you need is to direct.

The cost of construction is increasing. It may be necessary to raise the price. *Order now.*

Yuba Manufacturing Company

Marysville, California

Tractor Models: 12-20, 20-35, 40-70 Pump Models: For all Farm Purposes
Plow Models: Yuba Field Plow, Yuba All-Around Plow
There are separate catalogues – ask for the one in which you are interested

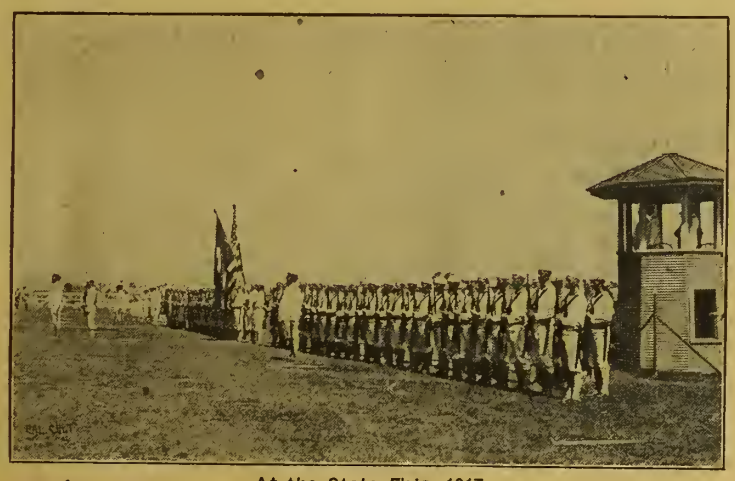
California Cultivator

Vol. LI, No. 8 Los Angeles: August 24, 1918 One Dollar Yearly

Greater Premiums for Genuine Farm Exhibits

By A. Layman

"TO HOLD or not to hold" an agricultural fair is a question which has concerned many a community in view of the fact that the war has created problems so numerous. One of these problems has been that of greater production, and some communities have felt that the greater production could be secured through centering directly on production. Others have felt the need of more education, of learning best methods of work, of inspiring to that work to the limit, and have argued that that inspiration could be secured in no way more satisfactorily than through an agricultural fair. More communities have accepted the latter belief, and we think there will be more fairs held this year than in any preceding year. In any case, California has taken this position and will hold a greater state fair than ever, and the southern end of the state is making an effort to practically equal the state fair at Sacramento. It has been years since Los Angeles has held what was at one time known as the Sixth District Fair, though it has maintained grounds which are admirably situated for a great fair.



At the State Fair, 1917
Jackies at drill in front of grand stand.

But our first fair is that of the state, which will be held in Sacramento, August 31 to September 8.

California's first state fair was held in San Francisco, October 4, 1854. The next was held in Sacramento, 1855. The '56 fair was held in San Jose; the '57 fair in Stockton; the '58 fair in Marysville; the '59 and all subsequent fairs at Sacramento. The premiums at the first fair totalled $4660; those offered for the coming, 1918, fair will be $45,000 and in addition $22,500 appropriated for the races. This will be the first state fair held under the presidency of George C. Roeding of Fresno. The president for the past three years has been John M. Perry of Stockton.

In looking over the list of state fairs, the premiums and racing purses offered, there are a number of interesting items developed. Until 1873 no record is given of racing purses. The premium lists up to that time aggregated not to exceed $10,000 in any one year. In 1873, however, the premium list was $8,925 and the racing purses, $14,200. Both these amounts were increased up to 1892 when the premium list had reached $17,106, racing, $29,950. Then came a decline in premiums and a material increase in the amount for racing. This resulted by 1900 in a premium list of $9768, while there was appropriated for racing $38,745. The first year in which the premium list became greater than the appropriation for racing was in 1910. That year only $14,465 was appropriated for premiums and only $6,930 for racing.

In Tractor and Implement Tent
The display of tractors this year will be greater than ever. Over 60 are already scheduled.

Under the presidency of A. L. Scott racing was again encouraged, and in 1911 and until the fair of 1914 general agriculture was not so generously treated. In 1915 there was no fair held because of the Exposition. The last two years agriculture has been given its rightful place, and, while there is still racing, it does not dominate as it did at one time.

During the past few years there has been question as to whether the live stock interests or the farm power and implement interests were increasing with greater rapidity in occupying the attention of fair attendants. Tractors, especially, have made a strong bid for favor, one year hodling demonstrations on space immediately adjoining the fair grounds. At last' year's fair there was given only a still exhibit, but there were tractors of practically every make used on the Pacific Coast. The California Tractormen's Association promises that the coming exhibit of tractors, farm implements and labor saving machinery will surpass any similar exhibit west of the Rockies.

There will be several events of particular interest to live stock people, especially to dairymen. One feature which always creates greatest interest is the butter scoring contest. There will also be milking contests and a large exhibit of all dairy products and appliances in the reenforced concrete dairy building erected at large expense some three years ago.

Regarding the tractor features Secretary Paine writes: Tentative plans called for the parade to take place on the race track in front of the grandstand during the early part of fair week, but a change as to place may be ordered if it is found that the huge wheels of the heavy machines are liable to seriously mar the smoothness of the track's surface. In that event, the drives through the grounds probably will be utilized to stage the spectacle.

Everything from the small garden tractor, driven by a motorcycle engine and weighing less than 100 pounds, to the mighty 75 horsepower 14 ton leviathan, capable of doing the work of 40 horses in plowing up 60 or 70 acres of bean, rice or grain field in a day's time, will participate in the parade. Some will be of the one wheel type of drive, others will be two wheel, three wheel and four wheel machines while a few will have no wheels at all. These are operated on the track-laying principle of construction, which has been demonstrated so impressively by the work of the fighting tanks on the European battlefields.

More than 60 different makes of tractors will be exhibited at the State Fair this year and all will have place in the parade.

In the Counties Exhibits Tent
The tent which sufficed last year has given way to the $300,000 Horticultural Building

Early Morning on State Fair Grounds
Machinery Building in foreground, Manufacturers in center. The Manufacturers Building is used largely by large dealers in displaying and demonstrating their wares.

Agricultural News Notes of the Pacific Coast

Northern California

A. L. Wisker, the Bartlett pear grower of Nevada County, has been conducting experiments in cross pollination of pears.

California flour mills are shipping flour to our army in France in sacks which will be filled with dirt and used for trench embankments.

Butte County has begun its harvest of almonds two weeks earlier than usual. The prune crop also is maturing early owing to a dry season.

Butte County's entire pack of fava beans has been sold in the East. It is expected that a large acreage will be planted to this bean in the district about Oroville this fall.

Northern California papers are appealing to water companies and to irrigators to concrete irrigation ditches wherever possible and conserve the limited quantity of water.

At the meeting of the Northern California Counties' Association at Weaverville, September 9-11, delegates will be present from San Francisco and from Oregon and Washington.

A party of 15 orchardists of El Dorado County with Farm Adviser Jones last week made a tour of inspection of packing houses at Newcastle and of pear orchards in Grass Valley.

The El Dorado County farm bureau is planning for a big picnic to be held the first week in October. The annual election of officers will be held at that time, and it is planned to have exhibits of livestock.

"Listeners in" on telephone lines were recently scored by Judge Finch of Glenn County. Complaint has been made that notice of grain fires has been delayed by people who cut in on the line through curiosity.

Central California

Offers of $40 for Tokays are being received by Lodi growers.

Thompson Seedless are meeting quick demand in Eastern markets.

The poultry association of Santa Cruz is conducting an egg laying contest.

Donald Penny has taken over the office of horticultural commissioner of Santa Cruz County.

The Associated Olive Growers has leased its plant at Lindsay to the Pacific Products Company.

Members of the Ceres Fig Growers' Association met last week to talk over marketing contracts.

The Madera Fruit Growers' Association is making large shipments of fresh fruits to Eastern centers.

Several cargos of flour have recently been shipped from California to the Allies via the Emergency Fleet.

Officers of the California Fruit Growers' Association were in Lindsay recently discussing with growers the new plan of turning cull oranges into marmalade.

Peach growers who had planned to sell their peach pits to Uncle Sam are informed that they will not be put to the expense of sacking but may deliver in bulk.

The destructive progress of the army worm in San Joaquin Valley vineyards was stopped by trenching. Deep furrows were plowed about the vineyards and the soil in them thoroughly pulverized.

Turlock cantaloupe growers have suffered seriously because of shortage of cars to take the melons out of the state. It has been necessary to market much of the crop in San Francisco with consequent lower prices.

Southern California

The fire lookout on Santiago Peak is a woman, Miss Winifred Hunter.

San Diego County increased its tomato acreage this year 500 per cent.

Oranges have been bringing unheard of prices in the Eastern markets.

Florida citrus growers are planning to put women into their packing houses.

The beet sugar factory at Oxnard will commence operation about August 20.

Buyers are said to be offering high prices for almonds, 22 cents for Nonpareil and 20 for I. X. L.

Large plantings of Valencias are being made in the Owensmouth district of the San Fernando Valley.

The government has contracted for 60 per cent of all the preaches handled by the Peach Growers' Association.

The apricot harvesting season was unprecedentedly short this year owing to hot weather maturing the fruit rapidly.

Apricot growers of the Hemet Valley state that the work of the Women's Land Army has been invaluable to them.

Nadeau Park, Los Angeles County, is sending out heavy shipments of tomatoes. One-third of the crop goes into local consumption.

There has been considerable dissatisfaction with the operating methods of the Poultry Producers' Association organized by the state market director and now a formal petition has been presented to Food Commissioner Cole in Los Angeles by poultrymen of Inglewood, Gardena and Burbank, asking that the association be dissolved.

The Coast and General

Florida's orange crop is estimated at 12,000 cars.

Soldier barracks are being erected at the Oregon Agricultural College at Corvallis.

The war trade board has prohibited importation of rice for domestic consumption.

The United States food administration has issued regulations for cotton ginning.

No big contracts for apples have so far been reported from the Wenatchee district of Washington.

The food administration has prohibited purchase of grain for malting purposes before October 1.

A campaign against grasshoppers in Harney Valley, Oregon, has just been successfully completed.

A pen of Oregons holds the honors for the last week of the International Egg Laying Contest at Storrs.

Surgeon-General Gorgas is laying comprehensive plans for the physical rehabilitation of disabled soldiers.

Georgia's peach crop this year was a record breaker. Over 8000 carloads have been shipped out of the state.

Flour and feed selling schedules for Pacific Coast mills have been announced by the food administration. The schedule covers prices of flour, bran, mixed feed, middlings, and shorts.

The problem of how to amuse the wounded soldiers who are unable to sit up has been solved in a simple manner by the Y. M. C. A. at the base hospitals in the camps. Portable motion picture machines are so stationed that the projections appear on the ceiling, and all the patient lying on his back need do is to look up.

Farm for Profit

and Help U. S. Win the War

Authoritative tests have proved that as high as 50 per cent increase in crop production may be expected from proper use of fertilizer. Do you realize what that increase means? Fertilizer is the basis of crop production, and compared to the prices of the crops they help to produce, fertilizers were never so cheap as they are today.

MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

HAUSER PACKING COMPANY

9th and Mateo Sts. PHONE 10336—Bdwy, 5600 Los Angeles, Cal.

Cut More Corn

With Fewer Horses and Save Breakages to Make More Profit

Mounting a Cushman Motor on any Corn Binder will enable two horses to do the work of four or six as they never tire pulling only the weight of the machine.
The mechanism is run steadily relieving all stress and strain from the binder.
The motor may be taken off to do any other farm work using one to five horsepower.
The CUSHMAN will do MORE KINDS of FARM WORK than any other engine made.

See your dealer or drop a card for information to

Thomas R. Browne, Factory Representative Cushman Motor Works, Lincoln, Neb.
207 Yosemite Bldg. STOCKTON, CAL. Phone 1962

Look Ahead

THE BASIS FOR ORCHARD PERFECTION CROW TREES TRADE MARK

Realize that RIGHT NOW is the best time in the history of our country for planting orchards. Not only must we win the war; we must supply Europe with fruit for many years to come as thousands of acres of her orchards have been totally destroyed.

Every year's delay in planting means the loss of a crop of fruit, so arrange to plant every acre possible this coming season; well cultivated summer crops between the trees will more than cover all costs.

Plant only the very best, most dependable trees to be had—John D. Rockefeller could not afford to plant any other kind.

Our stock of Fruit Trees is complete and extra fine in quality—better cannot be had anywhere at any price. Write at once for our Advance Price List, free upon request.

Crows' Nurseries - Gilroy, Calif.

Headquarters for all that is best in Fruit and Ornamental Trees and Plants

Write for our Prices on any NURSERY STOCK in which you may be inter- : : ested : :

The World Needs California's Fruits

Uncle Sam says, "Produce," and it's up to the fruit growers of California to make every acre of land produce to the limit. Cull out your poor trees and replant with Elmer Bros.' stock—the kind that produces. If you've bare land available — put it into trees this year. You'll help meet the world's needs — and you'll make big profits, besides! SEND FOR A COPY OF OUR NEW PRICE LIST, WHICH WILL SOON BE READY.

Elmer Bros.' Nursery

(The Nursery that Helped to Make Santa Clara Valley Famous)

74 So. Market St. San Jose, California

"Out of Luck" is the Dairyman Without a Silo

By C. L. Hughes

IN A CERTAIN farm in California there stands a concrete silo, so alone that it attracted my attention many times as I drove past it. The only buildings on the place are a small shed for horses. One windy night as I was passing this place one of my rear wheels sank into an unnoticed bog at the edge of the road and it became necessary to go to this farm house for a team to pull me out, and the incident afforded an opportunity to satisfy my curiosity about that lonely silo. It seems that the owner does not own a single cow, but expects to some day, and the silo was erected as a safety first measure to solve the feed problem. That silo has now been full of good corn ensilage for more than two years, and still there is not a cow on the place, but when the dairy herd does come it will not suffer for the want of succulent feed.

When Fred W. Kiesel, owner of the beautiful Jane Garden Farm at Sacramento started to assemble his fine herd of registered Holsteins, the very first dairy structure that went up was a silo, and while barns, sheds, and corrals have since been built in plenty, the cattle were provided with good feed first, and good housing afterward.

The lonely silo waiting for two years to deliver its succulent contents to help increase our milk and butter production is of course an extreme case.

Mr. Kiesel's idea in building a silo first of all his dairy buildings is a rare case in California, and the more the writer observes feeding practice throughout the state the more does the idea seem to be rare—good business.

In your own neighborhood how many live stock farmers do you know who are falling short of success through the "high price of feed" or "shortage of feed"? How many men have you known to actually fail in live stock farming because of the lack of feed? Many men have so failed in most California communities.

The silo is the one great factor in California live stock feeding, next to alfalfa, and its place is becoming quite generally recognized by progressive live stock farmers throughout the state.

Most farms are capable of producing crops suitable for silage, such as corn, barley, oats, and some of the sorghums, and it is safe to say that any California farm incapable of producing a silage crop is unsuitable for successful live stock farming.

The best advertisement of a silo in any community is a silo, for once live stock farmers in a community have had an opportunity to observe the practical advantages in feeding silage it is not long until the landscape in that locality becomes well dotted with substantial silos.

The writer recently talked with a live dealer who had the agency last year for a well known silo, his territory covering two counties. Roughly he sold about $20,000 worth of silos in his two counties during 1917. This year his agency covers only one county yet his total sales in that one county for the first seven months of 1918 practically equal his entire sales in two counties during all of 1917.

Not long ago the writer visited the Lewis Moreing place in San Joaquin County. On this farm 260 cows are in milk and corn silage has a large place in their ration. There are four tile silos on the place, each with a capacity of 180 tons, while two more big ones each of 420 tons capacity have recently been constructed. The

The California Way of Making Silage

silo situation is very aptly summed up by J. S. Moore, superintendent of the Moreing farm who says, "The California dairyman who is trying to operate without a silo is out of luck."

NECESSITY FOR SILOS

I DO not see how any dairyman in California can produce milk under present conditions and make a living unless he makes the silo his principal reliance." This is the view taken of the necessity for silos as expressed by George E. Platt, life long dairyman and head of the Los Angeles Creamery. Mr. Platt has made a complete success of milk production and is today milking hundreds of cows. He says that to meet his requirements he finds nothing equal to oats for silage. Of course he does not secure the tonnage which may be had from Indian corn silage, but he takes the position that the cheapest way to secure grain concentrates is to grow oats until the grain is "coming into the dough." This gives quality and results.

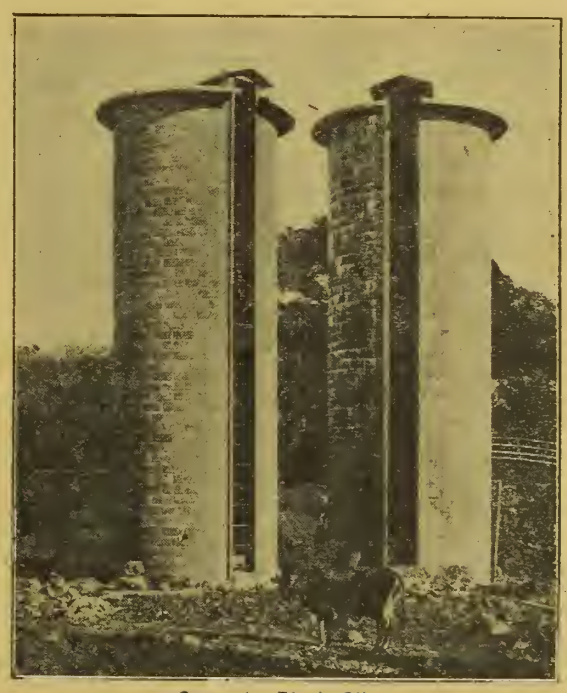
Better, with this crop planted in, say, the middle of November, siloed in February or March, the ground may then be fitted and a spring crop of Indian corn give a fall filling for silos from the same ground. Mr. Platt gives a suggestion, however, in the matter of packing such oat silage in the silo. He believes in keeping the surface "well cupped," or saucer shaped, and at all times be sure that tramping is well done around edges. This, especially, where a rank or strawy growth is secured. Wheat does not make a satisfactory silage.

In planting corn, plant far enough apart so as to secure "an ear to the stalk." Grain or high quality silage is the prime requisite. Then milk production at minimum purchasing of concentrates is possible.

The oats will produce perhaps ordinarily not more than eight tons, while corn will produce 15 or 20, possibly double that under abnormal conditions, but grown, as indicated above, two crops to the year, with milk sold at present prices, there are long possibilities in the feeding of silage.

On the other hand below is given an article by Mr. Coppini of Humboldt County, where conditions are different from those in other parts of the state. Again, another article by Frampton Bros., 600 miles away, and here again the silo has proved invaluable. Feeding problems today call for the use of the dairyman's head more than at any former time. Whether the dairyman uses natural pasturage, as does Mr. Coppini and secures satisfactory financial returns and in addition prizes for greatest and most economical production, or whether he uses silos as do Mr. Pratt, Frampton Bros. and hundreds more in this state, he must decide for himself.

Frampton Bros. Dairy, Los Angeles County
Note the silo and convenient feeding racks which make for most economical handling



Concrete Block Silos
Built by Jack London on his Glen Ellen Ranch. Mr. London built these in 1913, all construction being done on the ranch, even to using of his own rock crusher. Silos are 43 feet in height and 12 feet in diameter.

A SILO PAYS

Written for California Cultivator
By Frampton Brothers

FOUR years ago we were feeding our dairy herd a ration of alfalfa and dry beet pulp and decided that we were not getting the results that we should and that we would have to get cheaper feed or quit the dairy business. After investigating ensilage as an economic cow feed we erected two silos, each 14 feet inside diameter and 41 feet 6 inches high, both of solid reenforced concrete. The first year we had a wonderful crop of ensilage corn, more than filling the two silos from less than ten acres. The entire cost of our ensilage in the silo was but a little over one dollar and a half, and the saving in feed paid for both expensive monolithic concrete silos by the time they were empty. We cannot speak too strongly of the value to the farmer of a permanent reenforced concrete silo which insures him feed safe from fire, wind and vermin, cannot leak and preserves all the juices in the ensilage. So much has been said against concrete for silos that we want to state here publicly that we can find not the slightest effect of the ensilage on the concrete of our silos after four years of use.

An important part of the economy of ensilage is the raising of the corn. We bought Ross ensilage corn seed and have been selecting it for several years until now we have a corn well adapted to this climate and these conditions, of enormous yield and best suited for ensilage. This year we carefully prepared about ten acres by deep plowing and frequent dressing so that when we planted on June 5th there was a dry powdery, dust mulch of several inches on top and moisture below. Nine weeks after planting the corn averaged 12 feet high, which means it has to date made an average growth of over 2¼ inches per day. The rows are 40 inches apart and it

Continued on Page 187

Established 1877 Forty-first Year

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and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

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Saturday, Aug. 24, 1918

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cuitivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cuitivator when writing the advertiser.

THIS WEEK'S COVER

The state fair draws immense crowds, especially on days of spectacular events. The Cultivator camera was brought into play at the instant of the head-on collision last year and the tense situation is portrayed on the cover of this issue. The spectacular features this year will be more largely military. The management promises to us a great fair. The premium lists are larger than ever.

FOOD, FORAGE AND FOREST

The fields and ranges of California have never been protected from fire as during the past few months. Volunteer fire fighters have been organized in almost every town. As a result disastrous fires have never been fewer. Let us all knock on wood and make still more efficient these fire fighting organizations. It all helps to put the crimp in the Kaiser's plans.

COMPARATIVE VALUES

Making an exhibit at an agricultural fair sometimes results in an awful hard bump. We grant that sometimes the "judge doesn't know" or perhaps "he is bought" or "wished to curry favor with a rich or powerful exhibitor" though we will have to confess that as a rule none of these considerations influence. Quality counts and the blue ribbon is ordinarily where it belongs. But the best judge of all is the farmer who pays his four bits and walks amongst the exhibits with open eyes. He is able to see that his own steer or horse which on the ranch at home was the "finest on earth" has certain weak points when it is led out along side of stock selected from the world's aristocracy.

In other words, there is no better place for making comparison of real values than a state or district fair. The modern fair has developed the judge who gives the reason for his decisions. This proves wonderfully helpful to the live stock breeder who is open to education.

TRACTOR INFORMATION

The farmer who wants information as to tractors or the latest improved implements will attend the state fair and the tractor exhibit and demonstration at Sacramento or the tractor demonstration at Los Angeles. Two great events covering several days with wonderful educational possibilities.

Experts and the best qualified engaged in the industry will be present. Take advantage of both these occasions.

EAT HEADS AND TAILS

Because of America's self denial and her saving of 140,000,000 bushels of wheat Europe is not so hungry and perhaps it is not untrue that liberty has been preserved to the earth. Europe has done her share of rationing, however, and one feature is most hopeful; she is learning, as is America, the food value of cereals other than wheat. Her millers are securing higher extraction from all grains, and Indian corn, barley, rice and other grains are becoming more popular. Our meatless days are not so many as they were, but the food administration urges care, and also urges the eating of certain products, even at every meal. Amongst these are: Heads, tongues, tails, livers, hearts, tripe, feet, barrelled beef, potted beef, beef loaf, chili con carne and beef trimmings. Beef trimmings are made into sausage, bologna and frankfurters, which need not be conserved.

NEXT YEAR

Gifford Pinchot is joining in the campaign for a greater food program for next year. A careful look ahead assures us that next year's demand will be far greater and if we are not careful our production may be less. While an occasional drouthy streak or hot spell has been chronicled during the past few months, in the main the country over the weather has been favorable and immense food production in America has saved the world from famine.

For next year it is none too early to plan. Farmers must appreciate that in the northern hemisphere there is not one ounce of reserve grain. Notwithstanding the most wonderful food conservation campaign ever conducted, the food production campaign has been in no sense equal. The campaign for the crop of 1919 must be far better managed than that of 1918. Mr. Pinchot refers to the fact that almost invariably those managing the greater food production campaign have not understood the farmer nor the farmer's problems. Too often city people have said: "Let us know your labor needs and we will supply the help." Imagine the farmer saying to the banker, the merchant, the dentist: "Let us know your labor needs and we will supply the help." Yet few professions call for more specialized knowledge than does farming. It takes time to make a farmer, and if this fact could be appreciated by those who would take the farmer under their maternal wing, more helpful suggestions could be made.

This Week's War Notes

The United States has loaned to the Allies a total of $6,492,040,000..

July U boat sinkings aggregated 270,000 tons as against 534,839 July, '17.

The Allies have the Germans looking East and are kicking them in the West.

Crown Prince Ruprecht of Bavaria is at home in Munch while his army is retreating.

Liberty three and a halfs were quoted in New York August 17 at 100.60 with 101 asked.

Total casualties to American troops in France number 21,467; total deaths including 291 lost at sea, 8193.

Young men whose 21st birthday has occurred since June 5 are to register this week, Saturday, August 14.

Since the Allies' advance began on July 18 nearly 80,000 Germans and 1700 cannon have been captured.

The ordnance department recently placed an order with a Connecticut manufacturer for 2,000,000 mess knives at 10¾ cents each.

The number of Allied troops in northwestern Russia is increasing and advance has been made more than 100 miles south of Archangel.

It is now predicted that the new man power bill which will change the draft ages to from 18-45 will pass within a few days and be immediately signed.

English troops from Bagdad have marched across Persia and occupied Baku on the western side of the Caspian, around which lie extensive oil fields.

Spain has notified Germany that future sinkings of her vessels will result in Spanish confiscation of corresponding tonnage of German interned shipping.

Rice riots are spreading to all parts of the Japanese empire and troops called to quell disturbances have killed many of the people. War contracts have made the large manufacturers and the wealthy more wealthy and caused such suffering on the part of the poor who were underpaid that a serious condition confronts the nation.

The retirement of the Germans has been almost continuous from the northern line in Flanders to south of Rheims. American troops along the Vesle, have proved strong support for the French. The most remarkable work of the week on the part of the Yanks has been the heavy artillery fire, which is becoming most effective.

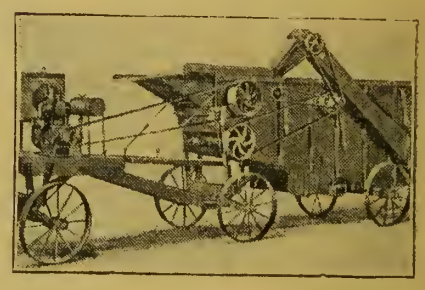
In giving instruction to railway employes, Director General McAdoo insists that there shall be courtesy shown at all times and adds: "Uncle Sam is running the railroads now. 'The public be damned' policy will in no case be tolerated on any road under government control."

The eastern Siberian situation is becoming more interesting. The number of Japanese troops has increased greatly, and because of Bolshevik threats against the Chinese and attack on Manchuria the Chinese army is approaching the frontier from the south. The Czecho-Slovak control the territory about Vladivostock, also have a strong force west of Lake Baikal, but between these it is known there is a large number of German prisoners who have been armed, and also Bolshevik. The third transport carrying American troops to Vladivostock has landed.

"New Supreme Government" has been organized in north Russia and Archangel proclaimed the headquarters or capital. The new government has issued a proclamation stating that the Bolshevik power has fallen and "The Supreme Government of the Northern Territory" will undertake to reestablish a single all-Russian national government by cooperation between various territories. It will defend the north and the entire nation against insolent onslaughts against Russian territory, independence and inhabitants made by Germany, Finland or other enemy countries; guarantee laboring classes land they are by right entitled to and defend the rights of labor, and overcome existing famine. The government asks the support of all classes which treasure the above objects and asks for friendly assistance of the people of England, America, France and others.

Aemrican automobile manufacturers have pledged themselves to restrict their output of passenger automobiles to 50 per cent, but the war industries board has urged that by January 1 every automobile manufactory in the United States be on a 100 per cent war basis.

Owens-Cushman Combination Bean Thresher



Cushman 8 hp. double cylinder motor connected to 20-in.-32-in. Owens Bean Thresher.

Owens Bean Threshers made in six sizes from the largest to the smallest size, embody the essential features necessary to thresh all varieties of Peas and Beans direct from the vines without spiitting the seed.

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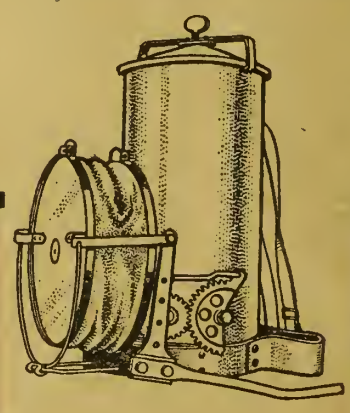

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Review of Present Bean Crop

THE farmers of this state need have no fear about an overproduction of beans this year, and a consequent depression of prices, according to Geo. A. Turner, president of the California Bean Growers' Association. His forecast is based not only on the reports of the United States bureau of crop estimates, but on individual reports received by the statistical department of the California Bean Growers' Association from its hundreds of members, among whom are the owners and managers of practically all of the big bean ranches in northern and central California. It is the practice of the association to obtain the fullest possible information at all critical periods of the crop season and to disseminate this information through the press of the bean districts.

Mr. Turner finds that the acreage planted to beans this year is slightly larger than in 1917, but dry weather conditions in many sections have materially interfered with the crop. Many growers report almost a total failure because of lack of moisture. Large whites, for instance, show at the present time an average condition in the counties of San Joaquin, Yuba and Colusa, but in Sacramento, Stanislaus and Yolo, they are reported below normal. While the outlook for pinks is encouraging in the most important districts where they are grown, the acreage is much less than last year and subnormal conditions ranging from 75 per cent down to 25 per cent are reported from some of the dry sections. Red Kidneys and Red Mexicans, which are grown largely in Stanislaus County, are reported to be about 75 per cent of normal. Black Eyes and Teparies, which are planted usually in the dry districts and are not easily affected by drought, range from 75 per cent to 100 per cent of normal.

It is particularly gratifying to note that the reports from the United States bureau of crop estimates check very closely with the reports received by the statistical department of the California Bean Growers' Association, direct from its grower members.

Mr. Turner calls attention to the fact that there is a wide difference between a normal crop and the crop of 1917. Last year the production went much above the average per acre and even a 90 per cent of normal production this year would be far below last year's output. Besides, fresh reports from Michigan, Oregon and other competitive bean sections, suggest that this year's production may be much less than usual on account of frosts, pests and other adverse conditions.

Mr. Turner is especially pleased with the splendid way in which the bean growers of California have responded this year to the government's appeal that they do everything possible to increase the food supply. Although the prices at planting time were not encouraging and though the growers anticipated great difficulties this year in securing labor, even at advanced prices, they planted freely and in large acreages. The United States food administration recognizes this response to the country's patriotic appeal and is doing its utmost to see that the growers get a living price for their beans. It is of course far too early to forecast the range of this year's prices, but the growers will undoubtedly receive a price that will compensate them for their decreased production in a period when all farming operations are carried on with increasing difficulties and expense.

The California Bean Growers' Association includes in its membership practically all of the large bean ranches and hundreds of smaller growers all the way from Salinas northward. It is the largest bean association in the world and will this year market many millions of dollars worth of beans. Its offices are in Stockton.

Sorghum Grain for Human Food

Ever since grain sorghum crops were first grown in the dry land West they have been used to some extent for human food. Ground at the local gristmill, they have been turned into batter cakes in the farm kitchen on many a winter's morn. In the making of corn bread or johnnycake they have taken the place of corn meal with satisfaction to the consumer. The grain also may be used successfully for pop corn.

Only in recent years, however, have scientific tests been made to determine their value in the human diet. The results of these experiments show that the meal of kafir and milo is comparable with corn meal. It can be used alone or in mixture with wheat flour in varying proportions in such ways as corn meal is used.

Owing to the absence of gluten in the protein, grain sorghum flour can not be used alone for making raised bread. It should not be ground into flour, therefore, but into meal instead. In this form it can be used for pancakes, bread, mush, puddings, etc., just as corn meal is used.

The use of kafir as human food has been discussed in Farmers' Bulletin 559. The following statements concerning it are quoted from that bulltin:

Since kafir resembles corn closely in composition and nutritive value, it is unnecessary to treat of these subjects in detail here. Something, however, must be said about special precaution necessary in preparing it for the table. In making mush for use alone, or as a foundation for other dishes (yeast bread, gingerbread, etc.), the ingredients should be thoroughly mixed before being heated. Cooking should always be more thorough than for Indian corn. In making gingerbread with corn meal, for example, it has been found sufficient to heat the meal and water for ten minutes in a double boiler; but in making the same dish with kafir meal it is necessary to cook the mush at least half an hour.

Government Regulates Cotton Gins

The United States food administration has issued regulations applying to all cotton ginners:

No licensee owning, controlling or operating a ginnery shall make any unreasonable charge for the service of cleaning seed cotton or separating the seed from the lint.

Ginners are to keep a correct record showing the name and address of each party for whom they gin cotton, the amount of cotton ginned in each case, and the actual charge made for such service. They must be in position at all times to furnish detailed information to the United States food administration.

It is necessary that ginners perform this service in such a way that the seed cotton shall be cleaned and the lint removed from the seed in an efficient manner. Such foreign substances as are removed from the seed cotton shall not be returned to the seed, but the seed shall be kept in a clean condition. Ginners are not permitted to mix any foreign material with cotton seed during the time that it is under their control or in their possession.

The charge for ginning shall be the same whether or not the cotton or the cotton seed is purchased by the ginner.

Ginners are to gin as rapidly as possible, consistent with good work, all dry seed cotton tendered them, and upon demand they are to return to the owner the cotton and cotton seed ginned by them. If cotton seed is purchased by the ginner, he must be guided by our rule No. 5 and circular No. 40.

Ginners are to keep a careful record, showing the name and address of each party from whom they purchase cotton seed, together with the quantity and price paid for same.

Anyway, you may buy and use all the salt you want. And it is easier to get along without sugar than salt, when you come to think about it.—Tulare Register.

The One Big Tractor Demonstration Begins September 17th

OVER 150,000 VISITORS EXPECTED

The Third Annual Tractor Demonstration

will be the biggest and most elaborate exhibition of Farm Machinery and Tractors ever held in America. Over one million dollars worth of Farm Machinery, Implements and Accessories will be on display in tents covering over sixty acres. Fifty or more sizes and types of tractors will be in operation, providing the best possible opportunity to inspect and judge tractor work on the farm.

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The Place—Whittier Boulevard

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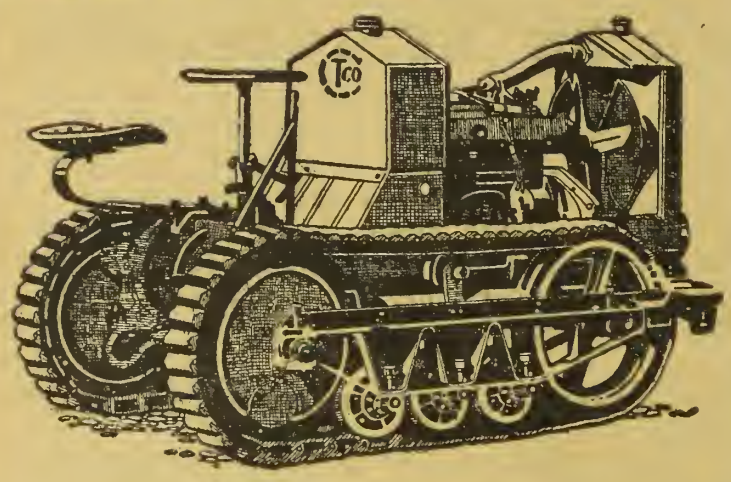

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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Orchard Prunings Make Humus

Written for California Cultivator By J. Eliot Coit, Los Angeles Farm Advisor

NOW since the ruling of the state food administration has limited the amount of humus forming materials available to the orchardist, growers should be interested in every possible source of humus which may be available. In this connection it may be well to mention prunings of trees both citrus and deciduous. On certain of the larger ranches where the owners have sufficient acreage to justify it a gasoline driven cutter is owned and operated. These cutters are drawn through the orchards after the pruners and quickly reduce the prunings to one inch lengths or less. A good cutter will handle matter up to one inch in diameter with comparative ease, especially if it is cut while still green.

One of the principal reasons why this practice has not been common in small orchards is because of the difficulty of owning and operating the cutters. I wish therefore, to make the suggestion that professional pruners who contract for the pruning of orchards be encouraged to own and operate brush cutters in addition. They could prune a small orchard and immediately cut up the prunings, and in this way the expense of the cutter would be distributed over a large enough acreage to make it easily available to all growers.

Pruners, however, can hardly be expected to buy these machines on their own initiative, but if growers generally will create a demand for this work no doubt it can be taken care of. The prunings of lemond orchards in particular may be expected to yield appreciable quantities of a fair quality of humus, and this source should not be neglected in these times of stress,

The Revolution of Farming

Written for California Cultivator By Arnold E. Needham

BETTER farming with its increased profits goes hand in hand with the use of modern machinery and implements. It is not the number of acres planted that determines the famer's yield and income, but the manner in which his acres are farmed. During the past few years improved farm machinery and implements have practically revolutionized the farming industry. Of the factors contributing to this revolution, the tractor has been the most potent.

There was a time, not many years ago, when the farmer was very skep-

Every Type of Tractor is to be Seen

tical as to the benefits derived from the use of a farm tractor. And well he might be for many of the tractors designed at that time fell far short of their manufacturers' claims. Even today the tractor admits of further development. It has advanced however to a stage where it is a most pronounced commercial success. Where once the farmer came to scoff, he now comes with serious intent. He investigates, examines and studies, prompted not so much by a spirit of criticism as by a desire to secure the tractor best suited to meet his needs. In other words, the question of today is not "Shall I buy a tractor" but rather "Which tractor shall I buy?"

This change in attitude has arisen as a result of the amazing strides made in the development and improvement of the tractor. The uses to which a tractor may be put at this time seem to be limited only by the mechanical ingenuity of the owner.

Formerly the tractor appealed to the farmer mainly as an instrument for pulling his plow. Now he uses his tractor for almost everything except the preparation of his meals. He not only plows, disks and harrows his soil, using his tractor as motive power, but he cuts his ensilage, saws his wood, pumps his water, digs his ditches, grades his roads, reclaims his overgrown land, and even at times moves his house or barn by means of this same power.

In other words, the tractor has become the "Man of all work" on the farm. It performs its tasks more economically and better than they could be performed by any other power, and more expeditiously.

From the farmer's standpoint it has also many advantages other than these.

The tractor's work is not handicapped by heat or cold. It can, if necessary, work day and night without ceasing. It does not grow fatigued. It works as effectively when the light is failing as when the dawn arises. It does not require any large outlay for its housing, nor does it need daily care and feeding when not in operation. Its requirements, even when in active employment, do not draw upon the food supplies now so essential to feed ourselves and our Allies. It reduces the demand for labor, and, as a result, the labor shortage has few terrors for the owner of a tractor. Its use permits advantage being taken of the most seasonable and effective times for performing the farmer's work and enables him to gather his crop when fully matured with the minimum of loss.

When a tractor is used the farmer can plow more acres and do it better. His cultivation is also more thorough, and consequently he not only produces more per acre, but secures a product of better quality at less cost.

As a matter of fact so many and varied are the tasks now performed by the tractor, with greater efficiency and more economically than any other farm power, that it has become the

One of the Big Ones

pivot around which the activities of the farm revolve.

Even the government has awakened to the realization that greater food production, absolutely vital at this time, depends in large measure on the wider use of tractors, and in accordance with this realization, is putting forth efforts through the Food Administration and other Government agencies, to assist farmers to secure tractors.

Many of our states have already purchased tractors and have put them to use either under contract or by sale on long term payments.

Our European Allies are securing tractors as fast as our facilities will permit their shipment, and already hundreds are at work in England, France and Italy.

A recent vacancy in the position of superintendent of the southern branch insectary caused by the resignation of Charles Perrin to enter the army, has been filled by the appointment of H. M. Armitage, formerly county horticultural commissioner of San Diego.

Estimate of Fruit Crops

Under date of August 12 George P. Weldon of the state horticultural commission sends out estimates in percentage of normal, of various fruit crops, compiled from reports of county horticultural commissioners and U. S. crop reporters:

Almonds

Alameda County 35 per cent of normal, Colusa 80, Contra Costa 70, Merced 90, Riverside 100, Sacramento 90, San Joaquin 60, Solano 60, Stanislaus 80, Sutter 60, Yolo 50.

Apples

Humboldt County 85 per cent of normal crop, Los Angeles 90, Monterey 80, San Bernardino 90, Santa Cruz 80, Sonoma 80.

Apricots

Alameda County 90 per cent of normal crop, Los Angeles 90, Orange 60, Riverside 65, San Benito 105, San Bernardino 50, San Joaquin 70, Santa Clara 100, Santa Cruz 90, Ventura 55, Yolo 40.

Figs

Butte County, Colusa, Fresno, Madera, Merced, San Joaquin, Stanislaus, Tulare, Yolo and Yuba all show 100 per cent crop, Los Angeles and Sutter 90.

Grapes

Butte County, El Dorado, Imperial, Kern, Lake, Madera, Marin, Merced, Nevada, Riverside, San Diego, San Joaquin, Santa Barbara and Yolo show 100 per cent crop, Kings, Monterey, Stanislaus and Tulare 110, Alameda 75, Contra Costa 85, Fresno 95, Los Angeles 85, Mendocino 90, Placer 90, Sacramento 95, San Bernardino 80, Santa Clara 80, Santa Cruz 65, Shasta 75, Solano 90, Sonoma 95, Sutter 70, Tehama 50, Yuba 80.

Olives

Butte County 55 per cent of normal crop, Fresno 70, Los Angeles 80, Madera 55, Riverside 50, Sacramento 60, San Bernardino 75, San Diego 100, San Joaquin 75, Santa Barbara 90, Sonoma 90, Tehama 75, Tulare 65, Yolo 50, Yuba 90.

Peaches

Butte County 70 per cent of normal crop, Fresno 70, Kings 90, Los Angeles 85, Merced 80, Placer 75, San Bernardino 60, San Joaquin 75, Santa Clara 80, Solano 80, Stanislaus 70, Sutter 75, Tehama 80, Tulare 65, Yolo 75.

Pears

Alameda County 80 per cent of normal crop, Contra Costa 65, Los Angeles 85, Napa 60, Placer 90, Sacramento 95, San Joaquin 90, Santa Clara 90, Solano 50, Sonoma 80, Yolo 85, Yuba 110.

Plums

Los Angeles County 80 per cent of normal crop, Placer 75, Sacramento 75, San Joaquin 80, Santa Clara 70, Solano 75, Tulare 70, Yolo 70.

Prunes

Colusa County 85 per cent of normal, Kings 90, Napa 75, Santa Clara 65, Solano 40, Sonoma 80, Sutter 80, Tulare 60, Yolo 60.

Walnuts

Los Angeles County 80 per cent of normal crop, Orange 75, Santa Barbara 90, Ventura 90.

Navel Oranges

Butte County 40 per cent of normal crop. Los Angeles 80, Orange 85, Riverside 45, San Bernardino 45, Tulare 32, Ventura 95.

Valencias

Los Angeles County 90 per cent of normal crop, Orange 85, Riverside 80, San Bernardino 75, Tulare 55.

Lemons

Los Angeles County 95 per cent of normal crop, Orange 90, Riverside 70, San Bernardino 85, San Diego 85, Tulare 80, Ventura 120.

Grapefruit

Imperial County 100 per cent of normal crop, Los Angeles 80, Orange 90, Riverside 60, San Bernardino 90, San Diego 90, Tulare 80, Yolo 75.

The Care of Fruit Drying Plants

Here are some timely reminders to the dried fruit men of California. They come from New South Wales, Australia, where the drying season has been over for some time. They are published in the Fruit World of Australasia:

"Now that the sun drying of fruit has finished for this season, growers should see that their plant that has been used during the drying of the fruit is properly stored as far as possible under cover.

"The trays should be thoroughly cleansed, the rack cover, side and ground hessians folded, the dipping tins, picking boxes and buckets, and sweat boxes cleansed before storing.

"Dirty appliances mean dirty fruit, and nothing discolors a tray so quickly as putting it away dirty, as moulds grow quickly upon the juices that have been spilt from the fruit upon the trays during the drying operations. The spores of the moulds are shed and lodge in the cracks and rough surfaces of the trays. During the next drying period these spores are transferred to the fruit, and so soon as favorable conditions, such as damp weather, when the fruit has to be stacked, set in, germinate, and mouldy fruit is the result. True, even on clean trays under similar weather conditions, fruit sometimes moulds, but the danger of the produce deteriorating from this cause is not so great when clean trays are used.

"The fruit juices and dust are more easily removed at the end of the drying season than by stacking the trays away unwashed and cleaning them just before the next drying season opens.

"The fruit dryer has usually more time to spend upon the care of his plant at the end of the drying operations than he has at the commencement, so that the trays will doubtless be better attended to before storing than they will if left till the next season.

"The damaged boxes and trays should be sorted out and placed by themselves, and can be repaired during wet weather."

Powder for Soil Blasting

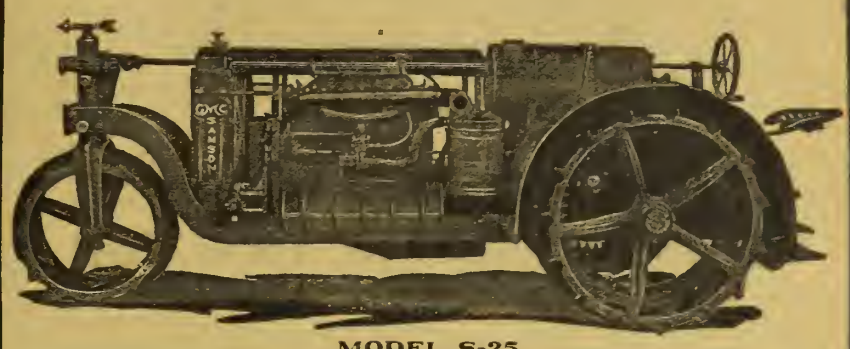
Fruit growers, gardeners and farmers who intend to subsoil their ground or who will have stumps to remove should bear in mind that there are great differences in the action of different explosives in the soil. Stumps can be taken out with almost any kind of powder, but some kinds pull the roots out cleaner than others and make smaller holes. Good results in tillage blasting cannot be secured at all with the wrong kind of powder.

The reason lies in the fact that some explosives are made so that they give a high velocity of detonation, while others give low velocity. These somewhat technical statements mean that some powders are quick and violent, tending to pulverize and grind to splinters or bits anything close to the charges, while others act more slowly and exert their force more as a push than as a grinding blow.

In tillage blasting the violent explosive is entirely out of place. Instead of lifting and breaking and crumbling a large area of soil, the effect is to compact the earth a little way from the charge and to make a cavity near it. The slower explosive, on the other hand, does not compact, but loosens and spreads its effect for yards about each charge.

Nitroglycerin dynamites and powders are of the violent class, even when of low percentage. Ammonia explosives are slower and are much better suited to soil blasting because of it. They do not lack in strength—it is the way they apply their strength that makes them better. As it happens the war has made nitroglycerin powders higher in price than

Allies in the Fight



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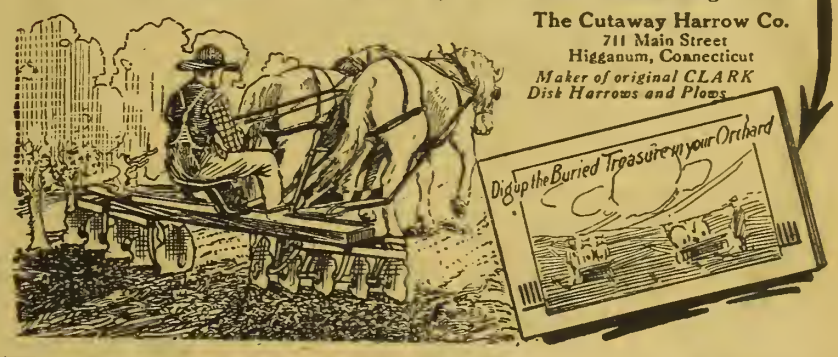

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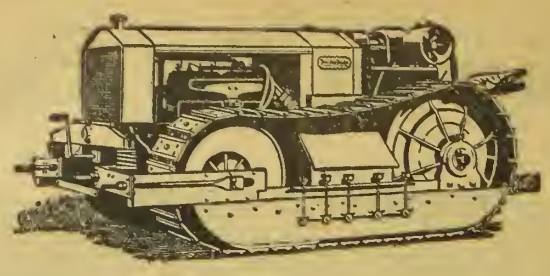

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ammonia, which is another reason for using the latter exclusively.

In blasting for trees it sometimes pays to use more than one charge in each tree bed and to fire them all together with an electric blasting machine. The combined explosions communicate one with another, and by reason of that give better execution. In stump blasting and in blasting ditches the electric machine is a necessity almost, as it cuts down the labor and time required. This method insures perfect detonation of all charges and permits the use of the same efficient ammonia explosives in stump removing and ditching that is found best for soil blasting.

What is a Rational System for Pruning the Valencia?

Written for California Cultivator By Robert W. Hodgson

CITRUS trees are usually pruned in California after the fruit has been picked or, in the case of lemons, at the time when they are carrying the least fruit. With the Valencia orange this means that pruning is done from May to November. The last few years have seen Valencia prices so satisfactory that it has been a considerable wrench for many growers to risk diminishing the amount of fruit by pruning. However, prices will probably not always be so high. The future must be looked to, and because the necessity for pruning for the maintenance of satisfactory trees has been a much debated question during the last few years the following discussion may be doubly apropos at the present time.

Sucker Growth Suppresses Fruit Buds

Typical Valencia sucker arising from good fruit wood. Notice how the fruit wood has been choked. We feel that suckers of this sort should be kept cut out.

The need for investigation in the field of citrus pruning is very great. Nobody realizes more keenly than the writer that as yet we know relatively little concerning this subject. It will take years spent in careful quantitative experimental work before we will be in a position to state positively that we know exactly what will be the results following certain systems of pruning. Moreover, when such facts are available, they will have to be interpreted with different citrus growing districts in the light of local conditions. However, growers have been experimenting with the pruning of Valencias now for a number of years. To be sure, much of it has been desultory and rather spasmodic; nevertheless, the experience obtained has at least been of considerable value in indicating certain results which can be largely attributed to the pruning practice followed. The writer is firmly of the belief that a discussion bringing together some of the ideas of our best citrus growers regarding this all important orchard operation has a distinct value, and this is one of the objects in mind in presenting this article.

One of the first questions arising in the minds of many California citrus growers is regarding the necessity or value of pruning. Does it pay to prune citrus trees is a question often asked at meetings of the growers. Lemon men are generally agreed that a certain amount of pruning is necessary in order to hold the rapidly growing lemon tree in shape to prevent it from breaking down under the weight of the fruit. This is especially necessary for windy sections. But orange men are not so well agreed. The navel grower frequently asserts that the only pruning his trees need consists in the taking out of cross or interfering limbs, dead brush, and lifting the lower branches off the ground, which after all is merely hygienic treatment such as any tree should receive. It must be admitted that there are many navel orchards treated in this manner that have been profitable bearers for years and are still in satisfactory shape. In fact, we should be ready to agree that of all citrus trees probably the Washington Navel does better with less pruning than any of the others.

But the case seems to be somewhat different with the Valencia. The habit of growth is quite different, being much less calculated to produce a strong framework capable of resisting the strains incident to the large crops borne. This is all the more important because of the larger average weight of fruit carried by the Valencia.

Moreover, examination of many of our older Valencia orange trees discloses the fact that they are going back. Although apparently well nourished and healthy, the crop is diminishing in quantity year by year, and in addition the sizes are getting smaller and smaller until in certain of the older orchards at the present time the percentage of marketable fruit is becoming alarmingly small. The limbs constituting the top of the tree seem to be deteriorating. This condition has caused a number of our orchardists to believe that the Valencia is relatively short-lived and that its period of maximum bearing is from 15 to 20 years, after which time it goes back. Some growers have even become convinced that renewing the trees by deheading is the proper procedure. These conclusions would seem well founded were it not for the fact there are numerous old Valencia trees which are not exhibiting this deterioration and continue to bear

Lots of Suckers and Unproductive Wood

A three year old Valencia tree allowed to grow naturally. It makes a large tree but not a strong one and the top is largely sucker wood.

satisfactory crops year after year. The conclusion cannot but be forced that a certain vigorous fast growing type of growth to which the Valencia is much given does not endure like the more slow growing kind of wood, but deteriorates after a certain period.

The Valencia does not seem so prone to give rise to sport limbs as the navel or to such a confusion of different kinds of wood as the lemon; nevertheless, it is extremely apt to produce a very rank vigorous sucker growth which if allowed to grow, carries the head of the tree too far from the ground, results in a very weak framework, and apparently deteriorates and becomes worthless after a few years of bearing. This type of growth bears large amounts of fruit even while relatively young as contrasted with sucker growth in the navel, and for that reason many growers rather encourage it. The fruit, however, is borne near the ends of the branches which then bend over and in turn give rise to the new sucker shoots which proceed to choke the parent limb beyond the point of origin of the new shoot. Such growth makes a very weak tree mechanically although it results in a tree large and vigorous looking for its age. The tendency is for the scaffold limbs to grow upward for several feet before branching, and this is repeated again and again until a very tall cylindrical tree results, much in contrast to the round, or ball-shaped navel. Valencia trees allowed to grow in this fashion require considerable propping when carrying the fruit in order to prevent the tree from breaking down.

Bearing these tendencies in mind a number of our most progressive growers are now pruning their Valencia trees to a habit of growth more like the navel. This is done by persistently keeping down all vigorous sucker growth, thus encouraging the development of the slower growing, more pendant, and mechanically stronger fruit wood. Their belief is that although the trees do not size up nearly so rapidly as trees allowed to grow naturally, they are by this means obtaining trees which will last much longer and be better able to stand up under the weight of the fruit. The mere item of avoiding propping with many growers is sufficient to cause them to look with favor upon a system of pruning which develops a strong compact tree.

For the development of healthy fruit wood a certain amount of light is necessary. If left to grow naturally, even though all sucker wood be excluded, the Valencia will grow so compact and dense that the growth of fruit wood inside the tree is prevented. This results in by far the greater part of the fruit being borne on the outer branches where it is exposed to bright sunlight, wind, and various other agencies which may be more or less unfavorable. Outside fruit is usually of poorer quality than inside fruit, being rougher and coarser. In addition it is desirable to utilize the bearing area of the tree to its greatest capacity and this can only be done by growing inside fruit. Large amounts of inside fruit can be obtained by keeping the tree sufficiently open to permit enough sunlight to filter in to encourage the development of vigorous fruiting wood.

The writer is inclined to believe that such a system of pruning constitutes the most rational system for the handling of the Valencia in the light of our present knowledge. It takes into consideration the development of a strong framework, the building of the tree on slow growing fruit wood, and the encouraging of the production of inside fruit. Moreover, it at least seems calculated to produce trees which, other things being equal, should bear profitably over a longer period than many of our present old Valencia trees.

PURPLE VETCH

Purple vetch gives promise of being a valuable addition to the list of crops that can be grown in the South and Pacific Coast states where winters are not severe, according to Farmers' Bulletin 967, just published by the United States department of agriculture. This vetch, which is similar to the common and hairy varieties, but is less hardy, was brought into the United States by the office of foreign seed and plant introduction in 1899 from Italy. In California, where experimental work has been conducted, it has proved one of the best, if not the best, crop for use as green manure in orchards, and in commercial plantings it has been thought well of by the farmers who have used it. In Western Oregon and Western Washington it can be grown successfully as a seed crop, the yields averaging from 12 to 15 bushels an acre. It has not been sufficiently tested in the Southern states to determine definitely its value in localities where common vetch is now being grown, but as it requires conditions similar to the common varieties, according to the bulletin, it seems probable that it may serve an excellent purpose in this region as well as in the western United States. It is of high feeding value and makes good hay in pasturage.

Under average conditions purple vetch will stand a winter temperature of 15 degrees above zero with little or no injury. Where the temperatures are not likely to fall below this mark it would be sown in the fall. With colder winter conditions, spring seeding is essential. In localities where common vetch has been grown successfully and the necessary bacteria are established in the soil, it is not necessary to inoculate for purple vetch.

RESERVOIRS FOR OLIVE OIL

A regular system of reservoirs and pipe lines for distributing olive oil is to be established at Stavanger, Norway. These pipe lines will supply oil to this and other cities for use in fish packing establishments. A heating plant will keep the oil at proper temperature. The reservoirs will be porcelain lined and filtration apparatus will be installed.

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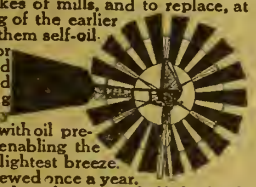

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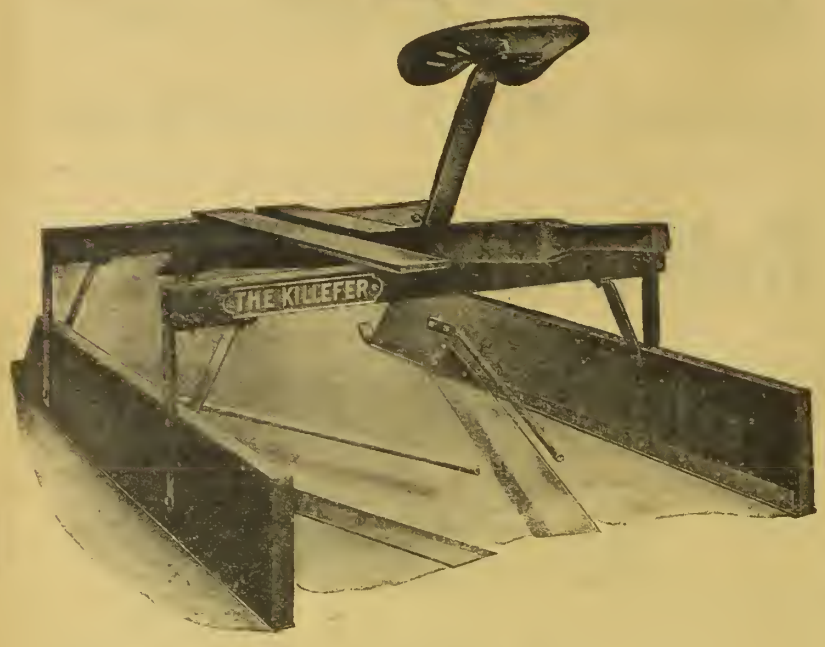

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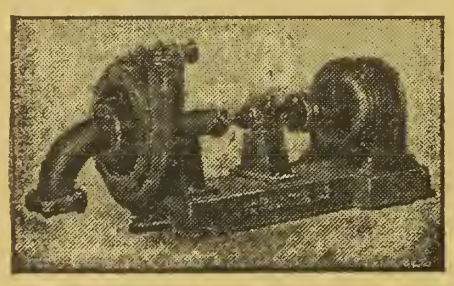

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Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Name of Apple

Please give me name of apple ripening in late July, beautiful red, white flesh of high quality.—Subscriber, Redondo.

This apple was submitted to several and finally sent to Deputy State Horticultural Commissioner Weldon who has made large study of apples in California, and he answers: "I am not quite certain of this fruit. It resembles McIntosh Red quite closely but it is too early for this variety. Another variety closely related to the McIntosh and which it also resembles is the Fameuse or Snow. Both of these varieties are characterized by very white flesh sometimes streaked with red, as in the case of the specimen sent, and each possesses a very fine flavor. While the single specimen could not be identified as either one of these varieties it is possible that when the tree comes into heavier bearing it will be found that it is either McIntosh Red or Snow. Often young trees bear fruit that is not altogether characteristic of the variety and one may easily be led astray by abnormalities which occur during the first or second year's bearing. Therefore I would suggest that, until another season's crop comes at least, the variety be called either McIntosh or Snow, with a big question mark after the name. Next season if I might receive half a dozen specimens I believe that I could identify it for certain."

Sow Eating Chickens

Take a common hog nose ring and put another ring, say one inch in diameter, in the hog ring. Put ring in sow's nose just as you would to keep her from rooting. The small ring thus hangs loose over her nose. It does not interfere with her eating but she will not catch any more chickens.—A. M. Mitchell, Redlands.

Pipe Taints Water

In laying a pipe line I have inadvertently used some second hand gas pipe which spoils the water. Is there anything I can use to overcome the gas taste?—Subscriber, Artesia.

We know of no better way than to continue use until the foul taste is removed which might require a long time, or else one might take up the pipe and dip. However, where water is to be used for drinking purposes it is best to use only galvanized pipe.

Aphis

Inclosed is a pod of Blackeye bean. Would like to know what to do to exterminate bugs. I am sulphuring the vines to see what good that will do. What is the name of the bug?—Subscriber, Etiwanda.

This is aphis. Sulphur is of little or no value with this particular pest. Tobacco extract spray or a weak kerosene emulsion will fix these best but one spraying is usually not sufficient. If the infested plants are in the garden near a hydrant where the water is under considerable pressure, simply spraying with the water will knock them off.

Brown Fruit Scale

I irrigated my old apricot trees the last time June 20, and while they are ripening the fruit shrinks or dries up. What is the reason? Some trees have a scale on like a red bug. How shall I kill it?—Subscriber, National City.

When fruit shrivels up on the tree it is a sign that it is not getting sufficient moisture. The moisture is either not in the ground or there is something wrong with the root system, for the moisture must come through the roots. Very often the soil appears moist enough but when you dig down where the most of the roots are it is bone dry after a series of two or three dry years. There are many orchards on which the leaves and fruit have shriveled up and dropped.

The scale you describe is evidently brown apricot scale and infests prune trees as well. It sometimes almost encases the small branches. They usually disappear the second year so that it is very seldom that it is necessary to spray for them. There is a parasitc that takes care of them.—J. W. M.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal querles in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Quit Claim Deed

How can I go about getting a quit-claim deed of my property to my wife, and my wife to me?—Subscriber, Huntington Park.

You can get two quit-claim deeds at any stationery store, take them to a notary public, fill out the blanks on the deeds, sign them and acknowledge them and then each deliver the respective deeds to the other. That is a rather dangerous method of doing and has frequently been the cause of litigation of one nature or another. The best and the safest method for the usual case, and which usually attains the desired end, is to file a declaration of homestead upon the property, then in case of the death of either the property descends to the other without administration.

Will Legal in California

Must a will to be legal in California be drawn in the state of California?—Subscriber, Garden Grove.

No. It is sufficient if the will wherever drawn conforms as to its form and execution to the laws of California. That is likewise the general law throughout the United States.

Disposal of Estate

A man dies leaving a will which reads in part, "To my wife, the home at a certain number and street, value $4000 and all therein," also a stated amount of money, the balance of the money left to be divided equally among the children, naming each. Can the value of the home be changed by the appraisers and the balance taken from the estate? Can the appraisers place a value upon the furniture therein when nothing as to that value has been said? The property has not lost in value. What is the monthly allowance to the wife alone by law from an estate under $20,000? What is the administrator's fee upon such an estate?—Subscriber.

The appraisers are required to place a valuation upon each item of the estate; this is for the purpose of fixing the inheritance taxes, administrator's fees, etc. From the facts stated, it would seem that the valuation was merely part of the description of the house and, as such it would not entitle the widow to make up any supposed deficiency from the specific legacies to the children. The valuation of the appraisers is not for the purpose of affecting the disposition by the will of specific legacies wherein it appears that the valuation was

used merely as a part of the description. The law does not fix any monthly allowance for the wife in any size of estate; within the discretion of the court, upon petition, the widow may receive such monthly allowance from the estate as may be deemed reasonable by the court. She may also be allowed the possession of the homestead and furniture thereof for such time as the court may deem reasonable. The administrator's fee is seven per cent upon the first $1000; for the next $9000 at the rate of four per cent; for the next $10,000 at the rate of three per cent.

Army worms have been reported as doing considerable damage in various sections of the state. State Horticultural Commissioner Hecke is collecting information as to the extent of the invasion and methods of control used.

GROZ-IT

Highly Concentrated Pulverized

Manure

A mixture of cattle and sheep manure from animals fed on cotton seed meal and cake and alfalfa (highly nitrogenous foods) aged for several years under climate conditions that remove moisture but prevent leaching and fermenting.

No odor.

No flies or insects.

No weed seed or foreign matter.

Many times plant food values of ordinary manure.

Guaranteed contents.

Nitrogen, 1.5 to 2.0 per cent.

Phos. Acid, P_2O_5, 1.25 to 2 per cent.

Potash K_2O water soluble, 4 to 5 per cent.

We are shipping GROZ-IT in immense quantities to Southern and Eastern states, where present freight rates make it $10 per ton more than cost to you. Place your order now to insure delivery.

Sold in bags or bulk.

Write for circular and prices.

Also Ordinary Manure in Carloads

Horse - Sheep - Cattle and Rotted Manures

Pacific Manure & Fertilizer Co.

429 Davis St., San Francisco

IMPERIAL-LAGUNA IRRIGATION PLAN

The negotiations to connect the irrigation systems of Imperial Valley in Southern California with the Laguna Dam built by the reclamation service on the Colorado River at Yuma, Arizona, have been under way for months, and in June the Imperial Irrigation District sent the interior department a draft of proposed contract by which Imperial Valley could connect with the government dam, thus acquiring a permanent, stable diversion and clearer water from the desilting works at Laguna. The district requested a number of changes in the proposed agreement, and today the department sent a new draft accepting most of the the district changes. The remaining points relate to water for the government irrigation project at Yuma and the development of power. On these points the contract reads as follows:

"The Secretary of the Interior shall control the division of water and shall divert for use of the Yuma project or any auxiliary thereof as heretofore or hereafter undertaken by the United States within the present boundaries of the United States and not exceeding 120,000 acres, sufficient water to secure the permanent and economical reclamation thereof, not exceeding, however, one-quarter of the water in the river above Laguna Dam.

"The United States reserves the right to develop power with the water in the enlarged main canal down to and including Siphon Drop. All other power possibilities in the main canal down to and including some convenient power site near Pilot Knob shall be developed by the United States to the extent deemed expedient by the secretary of the interior, at the joint expense and for the joint benefit of the Yuma project and the Imperial irrigation district as herein provided. The apportionment of the cost of canal and headworks alterations and enlargements, and of canal extension from the Laguna Dam to the site selected for power development near Pilot Knob, shall be made to the United States (for the Yuma project) and to the Imperial Irrigation District, in the proportion that 2000 second-feet bears to the total canal enlargement less 2000 second-feet. The cost of constructing power plants, transmission lines and other power plant accessories shall be also apportioned to Yuma project and the district, respectively, in the ratio that 8500 water horse power bears to the aggregate water horse power capacity of the plant installed."

This is followed by a provision for operation and maintenance of the power works by the interior department, delivering power to Yuma project and Imperial Valley for irrigation at cost plus ten per cent, the profits on this and commercial power sales being divided between the two in the ratio of their investments in the power plants and related works. The Yuma project is given a preference right to purchase power for irrigation pumping for a project of not exceeding 120,000 acres.

Further information may be secured from Director Reclamation Service, Washington, D. C.

TAKE CARE OF TREADS

It is surprising how many motorists never bother about the condition of the tread of their tires. The tread of rubber covering protects the cotton carcass of the tire from injury. Obviously, then, it is important that the tread be kept intact. Otherwise dirt, grease, water and other injurious substances gain access to the fabric and rapid deterioration results.

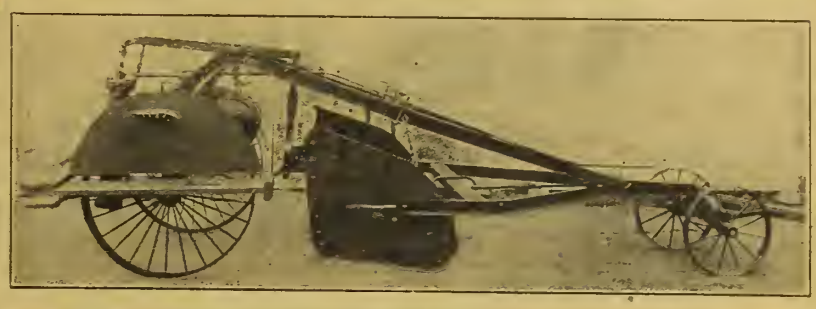
Small slashes and holes should be immediately plugged with plastic. If minor cuts that are caused by running over glass, sharp pebbles, etc., are not taken care of, the tire will surely go out of service prematurely. As the tire rolls along the cut sucks in water and gravel, which are absorbed by the fabric, just as a wick absorbs oil. The moisture causes separation of the tread from the fabric and the dirt works in at the point of separation. Soon the accumulation of dirt causes a "sand blister" or "mud boil." The tread continues to loosen farther around the tire and the fabric slowly rots away.

We Manufacture Levelers for Any Power From 6 Horses to a 75 H. P. Tractor

A Schmeiser Leveler

of the "Giant" Type

WILL WORK WONDERS ON YOUR FARM



Moving immense amounts of dirt daily, and working on ground too tough for horses and Fresnos to tackle, SCHMEISER POWER LAND LEVELERS are now being used with utmost success by a great many ranchers, large and small—also by contractors—saving their owners time, labor and money.

WE SEND THEM ON THREE DAYS' TRIAL

So extremely simple, a child could operate one, as a simple twist of the wrist raises and lowers the bucket or holds it stationary, as the case may require.

Send today for full information and our latest catalog of earth-moving machines.

Schmeiser Manufacturing Company

22 Mechanic St. **Davis, Cal.**

Manufacturers of

Sure Pop Almond Hullers and Separators, 3 sizes; McGarvin Fruit and Olive Graders, any size; Schandoney & Harrington Equalizing Hitches, any size; Diamond Special Harrows, Baker Clips, Clevises, and Schmeiser Portable Automatic Hay Derrick. We sell the Martin Ditcher and Grader.

Pioneer Roofing

- the everlastingly good

--the home guard that gives perfect protection

For New Buildings

No matter what type of building you may be figuring on—there is a weight of Pioneer Roofing that will just exactly suit. It is a perfect roofing for homes, garages, stores, barns, factories, and warehouses.

For Old

Now is the time to get your buildings in shape for the winter. Pioneer Roofing is inexpensive yet makes a long lasting and perfect weather-resisting covering for every building.

Insist on-- PIONEER ROOFING

In nearly every community the leading dealers recommend this reliable roofing because they know that it has given satisfaction to thousands and thousands of builders. If your dealer cannot supply you write us direct for samples, etc.

Pioneer Paper Co., Manufacturers

247-251 S. Los Angeles St., Los Angeles

TEAGUE QUALITY

CITRUS TREES

Orange, Lemon, Pomelo and Lime, bud selected (pedigreed) trees, subject to immediate delivery. Correspondence invited and prices cheerfully quoted.

Founded in 1889

R. M. Teague Citrus Nurseries

SAN DIMAS, CALIFORNIA

Gardner's Bean Harvester

meets the requirements of the rancher and is within easy reach of all.

Ask your dealer about it, or send direct to factory.

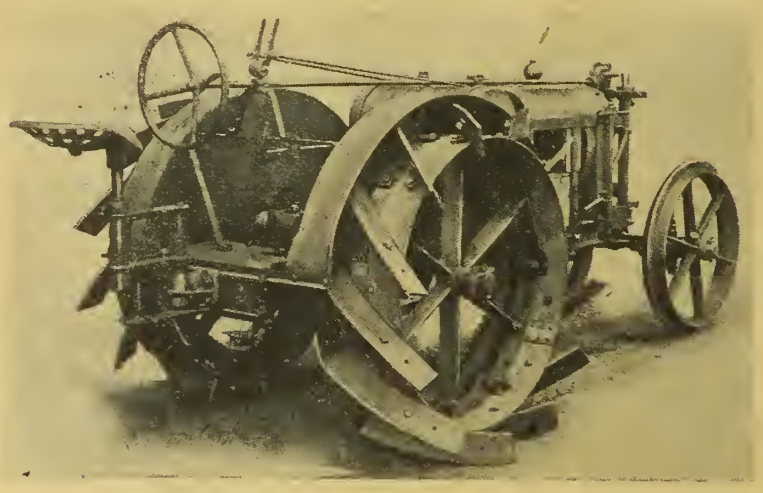
Gardner Harvester Co.

900 E. Fourth St., Santa Ana, Cal.

The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.

New Avery Tractor

5-10 H. P.



Price $650, California

Three Speed Transmission

Four Cylinders — **Plow on Direct**

High Speed on Road 5 1-2 Miles

2 1-8 Miles per Hour

Low - Short - Durable

Write for Information

F. H. Poss Co.

17-19 Main Street, San Francisco

LARGEST STOCK IN AMERICA
Decomposed.

Sheep - MANURES - Steer

Concentrated
In Perfect Mechanical Condition

Because of the shortage of manures in this territory it will be well to consider NOW your fertilizer requirements for the next twelve months.

More carefully handled and prepared than other manures. From highest nitrogenous feed.

	Steer Analysis	Sheep Analysis
Available Nitrogen	1.58 to 1.75 per cent	1.75 to 2.00 per cent
" Phosphoric Acid	.86 to 1.20 per cent	1.12 to 1.29 per cent
" Water Soluble Potash	3.48 to 3.92 per cent	3.62 to 3.88 per cent
" Humus	5.07 to 5.70 per cent	7.42 to 8.12 per cent

Highest in organic, and free from foreign matter. Shipped commercially dry basis.—Saves four-fifths labor in application. Write for price and particulars today to insure prompt delivery.

Calivada Fertilizer Company

423 Citizens National Bank Building, Los Angeles, California. Phone 65643.

SEEDS

For All Purposes

Morris & Snow Seed Co.

439 S. Main St. Los Angeles, Cal.

Under Rosslyn Hotel

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

The Bee Moth

Written for California Cultivator By Geo. A. Coleman

THE presence of the bee moth or "wax-worm" in the hive is evidence that all is not well otherwise with the bees.

Black bees do not protect their combs from the moth as well as good Italian bees. They are also more susceptible to brood diseases and so the colony may become too weak to protect themselves. Therefore, as a preventive measure keep only pure Italian stock.

Box hives or movable frame hives which have poor fitting covers, knot holes, season cracks, rough edges, etc., readily admit the adult moth as they can get through a very small crack and they can then lay their eggs in the comb. To prevent use only first class dovetail, metal roofed telescope covers and good tongue and groove bottom boards.

Keep all empty combs in tight boxes and fumigate once or twice during summer or season when not in use with carbon bisulphide or fumes of sulphur.

Examine all hives and frames occasionally for the larvae or "wax-worms" which can be destroyed in the comb with a wire or toothpick.

If you find combs all eaten up and the cocoons full of moth larvae the best thing is to burn them up.

Do not take all the honey away from the bees. Leave enough to carry them through the season when nothing is coming in.

Do not try to make nuclei unless the bees are bringing in plenty of nectar and pollen and in settled warm weather.

Do not leave hives or honey open so that robbing is started.

Every Type of Tractor

Manager O'Neal of the third annual tractor demonstration to be held at Los Angeles, September 17-21, is anticipating attendance which will prove a record breaker. Tractors and improved labor saving implements are imperative and the farmer is anxious for the information which will enable him to make intelligent selection. This opportunity is offered in this great demonstration.

One of the officials of the Traction Engine & Implement Dealers' Association of Southern California declared: "The educational value of being able to see the various makes and types of tractors operate side by side for comparison and the unsual opportunity to inspect thousands of dollars' worth of the finest implements, farm appliances and articles essential to the food grower, is worth hundreds of dollars to every man who farms, and his family."

A special program of events will take place every day. Rest rooms, dining room and other accommodations will be provided as well as ample parking space for automobiles.

One of the interesting exhibits will be that of the National Automotive School. Its students will work on various makes of tractors right on the grounds, demonstrating the proper methods of repairing; and a valuable free course of lectures will be given by different members of its faculty. Two lectures will be given daily and these will be of particular interest to tractor owners and prospective buyers as the instructors will give practical and concise advice on the care and upkeep of all makes of machines.

DRY STOVER FOR SILAGE

By mixing water with dry stover excellent ensilage can be made. Tests which demonstrated its value have recently been carried through by the Illinois agricultural college. Special machines have been built which husk the corn, mix the dry stover with water and make it into ensilage. In this way the food value of the dry stover, often wasted, is made fully available.

"The American people will gladly make any sacrifice in consumption and in the production of foodstuffs that will maintain the health, comfort and the courage of the people of the Allied countries. We are in fact eating at the common table with them." —President Wilson.

Those who dare all must share all.

Santa Anita Rancho

Anoakia Breeding Farm

Registered Holsteins

A herd of fine individuals, strongly bred in the lines of great production as evidenced by both short and long time records, handled in a manner to produce sound, healthy breeding stock.

Merci Lad Korndyke Burke

our senior herd sire, is by De Kol Hengerveld Burke and out of Winnie Korndyke Cornucopia De Kol, 31,034.1 pounds milk and 1201.00 pounds butter in one year, the first cow in California to produce 1200 pounds butter in one year. A few of his young sons out of good record dams for sale.

Prince Walker Cornucopia

Our junior herd sire, is sired by PRINCE GELSCHE WALKER, and out of Alba Sadie Cornucopia Creetia, 34.14 pounds butter in seven days, who is by a son of the first 30-pound cow, Sadie Vale Concordia who is dam of Sadie Vale Concordia 4th, 41.06 pounds butter in seven days, who in turn is the dam of the great sire, King Korndyke Sadie Vale and Sadie Vale Concordia 4th's Pietje, 38.43 pounds butter in seven days.

We expect to have at least 100 cows and heifers bred to Prince Walker Cornucopia by the time he is two years old, thus giving him one of the greatest opportunities yet afforded a young sire in the west.

We have a few good sons of Prince Gelsche Walker to offer at present.

SANTA ANITA RANCHO ***Santa Anita, Cal.***

Anita M. Baldwin, Owner *W. H. Taylor Supt.*

California Educational Butter and Cheese Scoring Contest at Tulare

By S. L. Denning

THE second scoring of the California Educational Butter and Cheese Scoring Contest was a success from the standpoint of attendance and interest. The butter makers have appreciated the value which is to be derived from their attendance at these gatherings and a representative number were present. This year's scorings have been held in different parts of the state in order to give as many butter makers as possible the opportunity of attending at least one of the scorings during the year. The meeting was well attended and some very interesting discussions took place. Besides those on the regular program F. W. Andreason of the state dairy bureau was present and made a short talk.

Sixteen cubes of butter and three cheese were entered for scoring. L. M. Davis of the bureau of markets and Dr. C. L. Roadhouse and S. L. Denning of the dairy division of the University Farm were the judges.

The scores on the entries which scored 91 or above are as follows:

The most serious defect was the presence of an old cream flavor. At this time of the year it is a serious problem with some creameries to obtain their cream in a first class condition. It should be remembered that the sooner gathered cream is churned the better the resulting butter will be. Some plants find it advisable to churn at night, so as to get each day's cream into butter as soon as possible. This plan might be followed by other creameries with good results.

There was again a big variation in the moisture and salt percentages in the different cubes. The percentage of salt varied from 1.65 per cent up to 4.1 per cent. The moisture content of several cubes was below 14.5 per cent. No doubt many buttermakers control their composition very closely from day to day but others can well afford to pay more attention to their test in the control of these factors. Besides being unable to make a uniform butter with a large variation in moisture and salt the overrun is largely dependent upon them and suffers if they are too low.

Butter

Name	Commercial Score	Composition Score	Average Score
N. Nyborg, Northern Cal. Milk Producers' Asso., Modesto	93½	100	96¾
W. F. Butler, Visalia Cooperative, Visalia	93¾	100	96⅜
E. M. Cook, Kerman, Kerman	92½	100	96¼
C. O. Johnson, Bodega, Bodega	92	99½	95¾
G. G. Plunkett, Exeter, Exeter	92½	98½	95½
H. P. Pyke, Orland Cheese and Butter Company, Orland	91½	99	95¼
H. Dons, University Farm Creamery, Davis	93¼	96½	94⅞
T. C. Moran, Oakdale, Oakdale	93	94	93½
N. Hansen, Western Refrigeration Company, Petaluma	91¼	95	93⅛
C. V. Haslin, Sierra, Madera	92½	93	93¾
A. Wirz, Hollister, Hollister	91¼	91½	91⅜
Cheddar Cheese			
O. R. Lynch, University Farm Creamery, Davis	93½		
H. C. Watson, Watson Cheese Factory, McArthur	91		

Butter Shows Good Workmanship

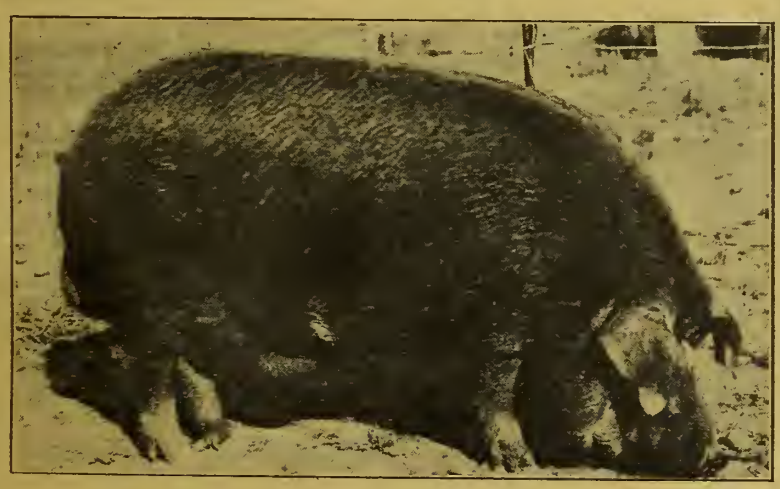
The workmanship on the entries in this scoring was very good. The absence of leaky body was very noticeable. Most of the entries had a close, dry firm body, although a few samples were criticised for being sticky and overworked. The average commercial score of the 16 samples was 91.84. The color of the entries was very uniform and even. Three cubes were criticised for being light in color but none for being mottled.

Few Cheese Entered

The small number of cheese entered was due largely to the high price of milk and the comparatively low price of cheese which has necessitated the closing of several factories. The cheese which were entered, however, were of very good quality.

The third and last scoring will be held at Davis on November 21 in connection with the experienced buttermakers' short course. There will also be a butter and cheese scoring at the state fair.

Lakeside Stock Farm



Large and Medium
Poland Chinas

We have a large number of choice gilts for sale, also a few choice boars.

Geo. V. Beckman & Sons
Lodi, California

"I use this machine to fill my silo, cut all my dry feed and make alfalfa meal."

ACME Feed Cutter

ITS STEEL FRAME and 3-bearing cutter shaft mean durability, reduced vibration and economy of power.

The shearing stroke of its SPIRAL KNIVES produces a clean cut silage of even length that packs properly.

A SIZE FOR EVERY DAIRY

GET YOUR ORDER IN SOON. Our stock is still complete but the demand is heavy. Prompt action on your part will insure delivery of the size you want when you want it.

Catalog Mailed Promptly

IDEAL GREEN FEED SILOS
Leak Proof **Permanent**

De Laval Dairy Supply Co.
61 Beale St. **San Francisco**

AT THE STATE FAIR

We invite you to make the **De Laval Exhibit** your headquarters on the Fair Grounds.

King Segis Alcartra Prilly, 192705 (Our Junior Herd Sire)

Taken at 20 months old—Junior and Grand Champion at California State Fair 1917. See his get at State Fair Sacramento this year.

Sire: King Segis Pontiac Alcartra—the $50,000 Bull
Dam: Prilly Princess Julia De Kol
Record 30.44 pounds butter, 7 days at 4 years. "World's Record"
Records Made in our Herd Season of 1917-1918

		Milk
Countess Katie Hengerveld at 4 years	Butter 7 days, 31.15	645
Woodbine Rosa Pearl at 5 years 1 month	Butter 7 days, 30.40	742
Adrondac Wietske Dairy Maid, 5 years 9 months	Butter 7 days, 30.41	624
Jessie Fobes Burke at 7 years 2 months	Butter 7 days, 31.67	620
Sarah Topsey De Kol at 5 years 4 months	Butter 7 days, 32.40	701
Raphaella De Kol Pontiac, 6 years 11 months	Butter 7 days, 33.80	671
Mercedes Inka Hengerveld at 7 years 1 month	Butter 7 days, 34.02	696
Boweda at 7 years five months	Butter 7 days, 37.60	538

Season Two Year Old Records

Name	Age Yrs.	Age Mos.	Butter 7 days	Milk	Butter 30 days
K. S. P. Lyons	2	2	18.51	402	.....
Nattaline Walker	2	0	21.01	549	87.82
Tidy Abbekerk Korndyke	2	2	21.85	363	85.47
Empress Korndyke Pontiac	2	2	23.22	426	96.72
Fairmont Pauline De Kol 2nd	2	1	23.93	489	96.82
Rose De Kol Candee	2	2	24.35	451	94.19
Tora Pontiac of Vina	2	7	24.68	508	100.65
Besse Veeman Korndyke	2	3	25.02	534	103.22
Tulip Walker	2	1	26.58	493	102.04

There were 2028 Junior two year olds tested in the United States during the fiscal year 1917.

We stood as follows:
7 day Butter Records, 10th, 14th, 31st.
30 day Butter Records, 4th, 9th, 12th, 18th, 29th.
7 day Milk Records, 5th. 30 day Milk Records, 3rd, 6th, 17th.

In the Senior Two Class we stood:
7 day Butter Record, 20th. 7 day Milk Record, 11th.
30 day Butter Record, 7th. 30 day Milk Record, 6th.

Junior Three Class: 7 day Butter, 12th; 7 day Milk, 4th.
Senior Four Class: 7 day Butter, 15th; 7 day Milk, 7th.

Aged Class:
7 day Butter, 9th, 38th, 41st. 7 day Milk, 25th, 26th, 29th.
30 day Butter, 13th. 30 day Milk, 14th.

King Segis Alcartra Prilly is being bred to the above enumerated cows, also about fifty more just as good.

Young Bulls from High Record Dams for sale.

Bridgford Company, Knightsen, Contra Costa Co., Cal.

King Sadie Vale Idyl Segis

Heads Sunnyside Herd

His Dam is the California State Record junior 4 year old for 7 and 30 days

His Sire is a son of the only 40 lb. bull that has a 40 lb. daughter

Sire: KING KORNDYKE SADIE VALE 27th, son of King Korndyke Sadie Vale and a 27.98 pound daughter of a 32 pound cow. One of his five months old daughters sold for $1400.00 at Sacramento last December.

Dam: K. P. IDYL SEGIS, at four years, three months, butter seven days 35.57, milk 510.8, butter 30 days 132.13, milk 2488.6, best day's milk 95.8. As a three year old she made over 31 pounds butter in seven days. She is a daughter of King of the Pontiacs, the only double century sire.

KING SADIE VALE IDYL SEGIS was selected especially as a fit mate for the 30 daughters of Sir Veeman Korndyke Pontiac, 30 pound son of Sir Veeman Hengerveld, that are in my herd.

I now have for sale a few dandy sons of Sir Veeman Korndyke Pontiac out of some of the best cows sold in my spring sale. Some of them are about ready for service and are priced to interest dairymen.

Sunnyside Herd

R. F. Guerin, Owner **VISALIA, CAL.**

Prince Hiske Walker

HEADS MY HERD

You Need One of His Sons

You Need One of His Sons

Sire: PRINCE GELSCHE WALKER 81663, whose daughters have broken more state and world's records than the daughters of any other sire in California.

Dam: HISKE OF RIVERSIDE 93936, 26.68 pounds butter in seven days, 711.57 pounds butter in one year.

Full brother to LADY HISKE WALKER, 34.25 pounds butter in seven days, second highest California record for a junior four year old.

Seventy-five per cent the same blood as MISS VALLEY MEAD DE KOL WALKER, 36.81 pounds butter in seven days, 1114.66 pounds butter in one year as a junior three year old, (second highest in class) 25.25 pounds butter in seven days eight months after calving at three years, (world's record for age.)

PRINCE HISKE WALKER has been mated with a large number of well bred cows in my herd, including 20 A. R. O. cows with good records. His calves are vigorous, well marked and good individuals. I offer a very few of his young sons at this time.

PACKWOOD HERD

Walter F. Mitchell, Owner **Visalia, Cal.**

First Tulare Sale

Registered Holsteins

The fine new sales pavilion now being provided by Tulare Livestock Association will be dedicated by a sale of registered Holsteins at

Tulare, California

Thursday, Nov. 21, 1918

A very desirable lot of breeding cattle will be found in this sale, many of the females bred to the great young sires now owned in Tulare County.

MANAGEMENT

California Breeders Sales and Pedigree Company

J. M. Henderson, Jr., President C. L. Hughes, Sales Manager

Sacramento, California.

Tulare Coun

FEW California communities have as yet taken advantage of the benefits that surely follow when a given locality acquires a wide reputation as the home of select registered live stock. In fact there is probably no single community that has achieved success in this respect, with the one exception of Kings County, made famous by its breeders as a center where the highest class Poland-China swine may always be found.

Tulare County has now been put on the livestock map in a large way by the breeders within its borders who have established herds of outstanding excellence, and so rapidly has this development taken place that probably only a comparatively few residents of the county itself realize just what has taken place and what it means to the future of the community.

There are many herds of registered hogs in the county, but not until recently have the breeders made any special effort to exploit the community idea. The recent organization of the Duroc-Jersey men promises to make the county one of the leading centers of the breed on the Pacific Coast.

Tulare County also has one of the finest herds of registered Jerseys in California, owned by A. A. Jenkins. The practice in this herd of giving every female of milking age a Register of Merit record, and then the offering of only really select bulls for sale for breeding purposes, are large factors in bringing about the excellent demand for breeding bulls that the Jenkins herd enjoys.

The most spectacular and far reaching livestock development in Tulare County, however, has been in the herds of registered Holsteins, and whether or not the breeders originally started out with any definite community plan in view, the fact remains that the cattle they secured and the blood lines to which they have shown general preference are of such outstanding quality that the outside buyer going to Tulare County can go to at least a dozen Holstein herds and find a high degree of uniformity in breeding and type.

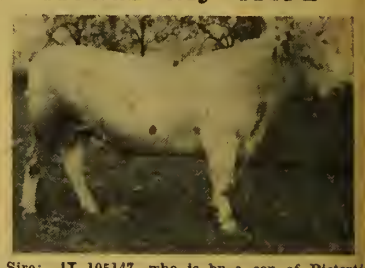
The writer recently had occasion to make up some totals on Tulare County live stock and found among the items that 11 registered Holstein bulls have been purchased by breeders within the county during the past two years for a total of approximately $22,000 or an average of $2000, and the main thing is that these bulls were all purchased well within their value. Since this total was compiled R. F. Guerin has purchased a great young sire whose purchase price will materially increase the average given for 11 bulls.

The Holstein breeders of Tulare County are all practical men, and all would no doubt be rated as men of modest means, but none of them have hesitated to pay for quality, and it is that same quality that is going to give Tulare County a prominent place in the minds of prospective Holstein buyers in the future.

The big thing in Tulare County is the dairy business and its allied industries, swine and poultry raising, and any plan of action that will increase the production of every dairy cow in the county will have an immediate effect upon every form of business in the county. The establishment of these splendid Holstein herds, headed by bulls of such outstanding merit, will contribute to such a result in a very large way. Dairymen of the county will be able to secure from these breeders bulls of the very best breeding, breeding that has produced and is now producing world's

It State Bells

Heads My Herd



Sire: IT 105147, who is by a son of Pietertje Maid Ormsby, 35.56 pounds butter in seven days, 145.66 pounds in 30 days, and is out of Pontiac Clothilde De Kol 2nd, the first cow to make 37 pounds butter in seven days and over 1200 pounds in one year.

Dam: K. P. STATE BELLS 217066, 27.88 pounds butter in seven days, 108.50 pounds butter in 30 days as a junior four year old. She is by King of the Pontiacs and out of a daughter of Do Kol 2nd's Butter Boy 3d.

Young sons of IT STATE BELLS out of well bred dams for sale.

E. C. Wharton, **Tulare, Cal.**

King Mead of Riverside 7th

Heads My Herd

Sire: KING MEAD OF RIVERSIDE 50290, sire of the world's official record cow Aaggie Acme of Riverside 2nd, 1331.41 pounds butter in one year. He is the only bull in the world all of whose daughters tested for one year average over four per cent butter fat.

Dam: CHANGELING TIDY ABBEKERK LOIS 166082, 613.1 pounds milk and 26.76 pounds butter in seven days, she by Changeling Butter Boy and out of a 30.54 pounds daughter of Tidy Abbekerk Prince. She is 100 per cent the same blood as Changeling Tidy Abbekerk Wayne, 44.43 pounds butter in seven days.

KING MEAD OF RIVERSIDE 7TH. Is acknowledged to be a wonderful individual as well as one of the best bred bulls in service in the state.

Dairymen, let me price young bulls to you.

L. W. Bardsley

TULARE, CAL.

King Ignaro Mead

Heads My Herd

Sire: KING MEAD OF RIVERSIDE 50290, the only sire whose entire list of yearly record daughters average over four per cent butter fat, among them the world's official record cow Aaggie Acme of Riverside 2nd, 1331.41 pounds butter in one year.

Dam: IGNARO CREAMCUP 102569, who made 29,545.0 pounds milk and 1077.76 pounds butter in one year. She is by Ignaro De Kol, the only bull with nine daughters above 20,000 pounds milk in one year, and the only bull that has 14 yearly record daughters, his entire list, that average over 20,000 pounds milk in one year.

Young bulls for sale.

Charles Yocum, **Tulare, Cal.**

y—Livestock Headquarters

records in milk and butter production, and wherever one of these bulls finds his way to the head of a herd of grade cows there will be a great improvement even in the first crop of calves, and as these good bulls are used on succeeding generations, gradually breeding out the common blood, Tulare County dairymen are going to have a class of grade Holstein cows that will stand out both for type and production, and they too will receive attention from buyers who want the best grade cows.

The business men of the county are beginning to realize something of what the future holds on account of the progressive work of the live stock breeders and show a willingness to cooperate in making town energy and country energy work in double harness. A concrete example of this spirit is shown by the recent organization of what will be known as Tulare Livestock Association, an organization composed of breeders, farmers, and town business men. A plot of ground 300 feet square, just in the edge of the city of Tulare and on the state highway, has been purchased, and upon it will be erected an $8000 sales pavilion where high class, well conducted sales of live stock may be held from time to time. The new building will be dedicated by a sale of registered Holsteins on November 21. and sales of other kinds of stock will no doubt follow.

King Korndyke Pontiac 20th, the great $6500 son of Miss Valley Mead De Kol Walker and King Korndyke Pontiac, will be seen on the show circuit this year. His owner, W. J. Higdon, Tulare, will show about a dozen head. There is a senior bull calf in this herd that—well just cast your eye over him at the state fair.

Prince Hiske Walker, owned by Walter Mitchell, Visalia, has not only developed into a very pleasing individual but is siring a great lot of calves. Mr. Mitchell has enough of his daughters to make a small herd, and it will also be remembered that H. E. Cornwell, Modesto, has about 15 daughters of this young sire. Prince Hiske Walker is being given heavy service in Mr. Mitchell's herd right now and within the next year he should have one of the largest groups of daughters of any bull in the state.

Alex Whaley, Tulare, made a ten strike when he bought Sir Aaggie De Kol Acme 2nd to head his herd of select heifers and cows. This young sire has the distinction of having the second highest average yearly butter record for five of his seven nearest dams, of any bull yet in service. Mr. Whaley bought him just in time as one of the most prominent Eastern breeders wanted him. This same breeder afterward paid a five figure price for a young bull with smaller average records behind him.

E. G. Wharton, Tulare, has a well bred herd of registered Holstein females headed by the splendidly bred bull It State Bells, who is by It and out of a 27 pound four year old daughter of King of the Pontiacs.

L. W. Bardsley, Tulare, is gradually replacing his grade Holsteins with purebreds and already has quite a number of choice breeding cows. At the fourth Sacramento sale he secured the fine young bull King Mead of Riverside 7th to head his herd. This young fellow is a beautiful individual and is bred in the purple, being by King Mead of Riverside and out of a 26 pound daughter of Changeling Butter Boy, and dam a 30 pound daughter of Tidy Abbekerk Prince.

Charles Yocum, Tulare, has gathered a small but select herd of registered Holsteins headed by King Ignaro Mead, who is by King Mead of Riverside and out of a daughter of Ignaro De Kol that made over 29,000 pounds milk and 1077 pounds butter in one year. He is developing into a first class individual.

R. F. Guerin, Visalia, has a fine herd of registered Holstein heifers growing up. About 30 of them are daughters of Sir Veeman Korndyke Pontiac, the 30 pound son of Sir Veeman Hengerveld, formerly at the head of Mr. Guerin's herd. These heifers are out of good record dams and will now be bred to King Sadie Vale Idyl Segis, the richly bred young bull Mr. Guerin recently purchased from McAlister & Son. This young sire is by King Korndyke Sadie Vale 27th and out of K. P. Idyl Segis, the California state record 4 year old for 7 and 30 days. She recently made 35.57 pounds butter in 7 days, 132.13 pounds in 30 days, and is a daughter of the only double century sire, King of the Pontiacs.

R. C. Sturgeon, Tulare, went out after the tops in foundation cattle for his herd of registered Holsteins and has gathered a notable herd in a short time. To head the good females he purchased the highly bred young bull Segis Pontiac Abbekerk, who is by Segis Pontiac De Kol Burke and out of Changeling Tidy Abbekerk Gem. the only 35 pound cow in the west that made over 34 pounds butter in seven days at the previous freshening. She is by Changeling Butter Boy, who now has over 100 A. R. O. daughters and is out of a 31 pound daughter of Tidy Abbekerk Prince.

Segis Pontiac Abbekerk
HEADS MY HERD

Sire: SEGIS PONTIAC DE KOL BURKE 97472, son of the former world's record cow Riverside Sadie De Kol Burke. He has 15 A. R. O. daughters including Aralia De Kol Pontiac Mead, 932.44 pounds butter in one year as a senior two year old, California record in class, and 34.44 pounds butter in seven days, 138.43 pounds in 30 days as a senior three year old, both California records in class.

Dam: CHANGELING TIDY ABBEKERK GEM, 639.0 pounds milk and 35.07 pounds butter in seven days. As a four year old she made 19,389.9 pounds milk and 767.36 pounds butter in one year. She is the only cow in California that has made over 34 and 35 pounds butter in seven days in two successive lactation periods. She is by Changeling Butter Boy and out of a 31.70 pound daughter of Tidy Abbekerk Prince.

HIS THREE NEAREST DAMS AVERAGE
Milk seven days..... 716.23
Butter 33.02
Milk 30 days 2938.23
Butter 130.91

For the present he is being mated with our foundation herd of about 40 high class cows and heifers. Keep this bull in mind, for he is going to be heard from later.

R. C. STURGEON
TULARE, CAL.

Sir Aaggie De Kol Acme 2nd
HEADS MY HERD

The average yearly butter records of five of his seven nearest dams is equalled by only one service bull in the world.

Four of his seven nearest dams made world's records.
Three of his seven nearest sires have 14 daughters above 20,000 pounds milk and seven above 1000 pounds butter.

Sire: SIR AAGGIE DE KOL ACME 185724, son of the world's official record cow Aaggie Acme of Riverside 2nd, 1331.41 pounds butter in one year.

Dam: ARALIA DE KOL 3D 164130, daughter of the former world's record cow Aralia De Kol. At two years, three months she made 17,509.5 pounds milk and 772.93 pounds butter in one year. At six years she made 646.2 pounds milk and 28.75 pounds butter in seven days, 24,554.1 pounds milk and 1100.47 pounds butter in one year.

FIVE OF HIS SEVEN NEAREST DAMS AVERAGE
Milk one year.....24,089.88 pounds
Butter ..... 1,105.07 pounds

This butter average is equaled by only one other bull of service age in the world.

SIR AAGGIE DE KOL ACME 2ND is being bred to a choice lot of cows and heifers in my herd. Keep your eye on him for through one of his young sons you can secure yearly record blood that is unsurpassed.

Eldorado Holstein Herd
Alex. Whaley, Owner *Tulare, Cal.*

We Like This Combination

Prince Riverside Walker

Sire: PRINCE GELSCHE WALKER 81663, whose daughters hold many state records and have broken world's records. His daughters are great dairy cows, notable for unusual capacity, veining, and splendid udders.

Dam: AAGGIE ACME OF RIVERSIDE 93957, 28.35 pounds butter in seven days, 808.82 pounds butter in one year. She is the dam of Aaggie Acme of Riverside 2nd, 35.38 pounds butter in seven days, 142.23 pounds butter in 30 days, 1331.41 pounds butter in one year, the world's record for a strictly official yearly test.

PRINCE RIVERSIDE WALKER is siring a beautiful lot of calves, and none of his sons have remained in our herd long enough to reach service age. We have a few good ones that will be ready for service soon.

King Korndyke Pontiac 20th

Sire: KING KORNDYKE PONTIAC 188174, who is by King of the Pontiacs and out of a half sister of Prince Gelsche Walker. He is conceded to be one of the greatest individual sons of his great sire, and is in heavy service in the fine herd at Jane Garden Farms, owned by Fred W. Kiesel, Sacramento.

Dam: MISS VALLEY MEAD DE KOL WALKER 250936, 688.6 pounds milk and 36.81 pounds butter in seven days, 21975.8 pounds milk and 1114.66 pounds butter in 339 days, as a junior three year old. Her yearly butter record is second highest in the world in class. She also held the world's record in the eight month after calving division as a senior 2 year old, and holds the world's record in the junior three year old class of the same division at the present time. As a senior two year old she made 17,010.9 pounds milk and 790.38 pounds butter in 257 days. She won first place in California Dairy Cow Competition over all ages and breeds, and is unquestionably one of the greatest heifers of the breed considered from every standpoint.

We have none of his sons yet to offer, but we will still accept a limited number of approved cows to his service.

You are cordially invited to visit our farm and see our herd. We have aimed to secure the most productive blood coupled with a high degree of desirable type, and believe that we have succeeded.

Our Entire Herd Is Tuberculin Tested

We will exhibit at California State Fair. Look up our exhibit and see the sort of youngsters we are breeding.

Tulare Holstein Farm
W. J. Higdon, Owner **TULARE, CAL.** **H. L. Redd, Herdsman**

Auction Sale

OF

63 Registered 63 Poland China

Bred Sows, Bred Gilts, Open Gilts, 3 Choice Boars, Big Type, The Farmer Hog

This sale offering is of the best I have ever raised. They are easy keeping stock, have big litters, are good mothers. Many of them are of prize winning quality. They will be sold to the highest bidder.

Thursday, September 26th at Hanford, California

Write to me for Catalog and Information

W. D. TREWHITT
Hanford, California

Boquet Herd of Pure Bred Hampshires

Be sure and see my display at the STATE and LIBERTY FAIRS. I will have about

28 Head at Sacramento

and

80 Head at Liberty Fair

Los Angeles

This is the best stock that I have ever had, most all sired by my great boar DIRECTOR, who in condition will weigh near the 1000-pound mark. My sows are of the very highest class of breeding and one or more of my boars or sows in your herd will surely add prestige to it.

L. A. Denker
Saugus, Cal.

The Bassett Kind Poland Chinas

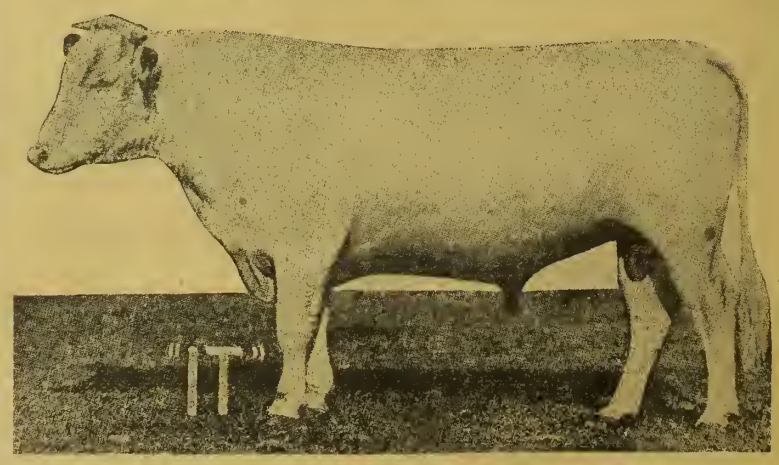
Model Fellow—See him at the State Fair, Sacramento

The Bassett kind of Poland-Chinas are the kind that give satisfaction, they win in the show ring, they fill the pork barrel, they command the highest prices from the packer. The Bassett kind have been bred for years to produce these results and they do produce them. Add new blood and start your foundation herd from the Bassett kind.

M. BASSETT
HANFORD, CAL.

IT IT

LEST YE FORGET!



Dam: Pontiac Clothilde De Kol 2nd, 37.21 pounds butter in seven days, 1267 pounds in one year.

Sire's Dam: Piettertje Maid Ormsby, 35.55 pounds butter in seven days.

From the greatest cow of all time.

We can now offer a few of his young sons from high record dams.

McALISTER & SON
CHINO, CALIFORNIA

IT IT

A SILO PAYS

Continued from Page 173

has been irrigated twice and will probably require two more irrigations as it has begun to show a few tassels and should grow 4 or 5 feet more.

We are at the present time feeding 30 pounds of ensilage and 25 pounds alfalfa hay per day to each of our 40 head of Holsteins. If we did not have the ensilage a cow would require at least 25 pounds more hay per day, which would amount to 15 tons per month for 40 head and at the present delivered price of $30 per ton for alfalfa, would amount to $450 per month. At $5 per ton (a liberal figure) the 18 tons of ensilage which we are feeding in place of the 15 tons of hay, would cost $90, which means that our silos are at the present time saving us $360 per month on our feed bill. That is the biggest argument we know of for silos. A saving of $360 per month in the feeding of 40 head of dairy cows at this time of the year and this year of the war makes a silo not only a financial necessity but a patriotic duty. Our advice to dairymen is to own a silo, and the best silo that can be bought, for like most other things the best is the cheapest in the long run, prepare the land well and sow the best seed, wait till the corn is mature before filling, then keep knives sharp and fill fast, using plenty of water by running a full stream into the blower. Have a small enough diameter silo for the size of your herd so as to feed off several inches in depth every day.

If we could not have a silo we would not be in the dairy business. See Mr. Copini's article on page 190.

Three Highest State Records

K. P. Tola, daughter of King of the Pontiacs, has seven day record of 34.03 pounds butter, and 30 day record of 2748.8 pounds milk and 139.90 pounds butter. Her one day milk record is 103 pounds. K. P. Tola and K. P. Idyl Segis are both the property of the McAlisters.

TWO GREAT RECORDS

Of the many excellent records of milk and butter production made in the fine herd of registered Holsteins owned by McAlister & Son, Chino, none have been more creditable than those recently made by two daughters of King of the Pontiacs.

The first of these was made by K. P. Tola, who by the way is full sister to the state record two year old K. P. Tola Joe. In seven days she made 34.03 pounds butter from 571.7 pounds milk, and in 30 days 139.90 pounds butter from 2748.8 pounds milk, milking as high as 103 pounds in one day. Her 30 day butter record is the third highest in California.

The other record was made by K. P. Idyl Segis, a junior four year old, who made 35.57 pounds butter from 510.8 pounds milk in seven days, 132.13 pounds butter from 2488.6 pounds milk in 30 days, milking as high as 95.8 pounds in one day. She thus becomes the California state record four year old for butter in both the seven day and 30 day divisions.

McAlister & Son recently sold the yearling son of K. P. Idyl Segis by King Korndyke Sadie Vale 27th to R. F. Guerin, Visalia, at the longest price ever paid for a California bred bull.

California Four Year Record Holder

K. P. Idyl Segis, daughter of King of the Pontiacs.

Sixth Semi-Annual SALE

Kings County Poland China Breeders Association

Wednesday, Oct. 9, 1918

at Kings County Fair Grounds, Hanford, California

80 HEAD 80

Registered Poland-China Bred Sows and Gilts to be sold without reservation from the best herds in Kings County.

Consigners:

M. Bassett
J. A. Crawshaw
Trewhitt Bros.
J. M. Bernstein
W. L. Haag & Son
W. S. Hubbard & Son
H. D. McCune
W. Bernstein
F. D. Ross
Dimmick Bros.
C. A. Vaughan
C. G. De Raad
E. G. Myer

Auctioneer: Col. Ben. A. Rhoades

For information or Catalog write to F. D. Ross, Sec., Hanford, Cal.

Bailey's Large Type Mule Foot

For a farmer hog, one that will feed easy and weigh out right none can equal the mule foot. Two years ago I brought the first large type mule foot hogs into the state. Since then I have placed numbers of them with real farmers and every buyer has been satisfied and wants more. My hogs at Sacramento 1917, won all Grand Championships, four Gold Medals, nine firsts and five seconds.

See My Exhibit Sacramento 1918

H. T. BAILEY

LODI, California Box 37 "The Blue Gums"

SHORTHORNS

Our years of experience in breeding and importing the best, are at your service. We have in our herd, prize winners and sires and dams of prize winners. Ready for sale some especially fine two year old heifers and some under two years bulls and heifers.

See Our Murphy Strain Berkshires before buying.

H. L. & E. H. Murphy

Perkins, Calif.

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Shorthorns ***Berkshires***

Hopland Stock Farm

Hopland, California

Registered Herd and Range Bulls by Right Choice 28951, and Tule King 304655.
Visit our Exhibit at State Fair.

A limited number of Boars and Gilts sired by

Iowana Rival Majestic, 194736

Reserved Grand Champion State Fair, 1916, and son of Rival Champion, 112500.

San Francisco Office, 226 Southern Pacific Building

Hopland Lass 179452, Grand Champion Cow, Sacramento, 1917.

—give the California pig a chance

The farms of California raise the finest fruits, vegetables and grains—why not hogs? Let's create a demand for California hams and bacon. We are curing the meats, fresh, sweet and tender. You do the buying. Give the California pig a chance. Tell your neighbor about

MAYROSE HAMS and BACON

—that the dealer guarantees them and will cheerfully take back any ham or bacon if found to be anything else than to his liking.

WESTERN MEAT COMPANY
SAN FRANCISCO

BERKSHIRES

Twenty Odd, Splendid Animals

and all for sale, will be exhibited at the
STATE FAIR by the

James Mills Orchards Corporation

Hamilton City, Cal.

See Them at State Fair

Smooth Big Type Poland Chinas

Prize winners and "toppers" in the auction ring. Long, deep, wide, good hams, shoulders, stand well, big, strong bone and good heart girth, easy keepers. Senior sire, President; Junior sire, California Smooth Jumbo.

John M. Bernstein - Hanford, Calif.

When writing advertisers, mention The Cultivator.

Field Notes From the Live Stock Men

Santa Cruz County's farm adviser, Henry Washburn, is urging more general attention to pure bred sheep or at least to the use of pure bred rams in the flocks already in that county. The adviser is making a survey of mountain lands. He is accompanied by a forage grass specialist and hopes to determine as to pasturage possibilities of the county.

Heavy rains on the ranges of Arizona, Nevada and Idaho during the past few weeks have greatly increased pasturage possibilities. More rain is needed in Oregon.

The conducting of public sales of fat steers and fat hogs is proving wonderfully satisfactory in many California stock raising counties. Not only are better prices secured to producers but a lessened expense is possible to the purchaser.

W. F. Sandercock writes as to the Berkshire colony near Sacramento. He has on his own ranch foundation stock from the Frank Brush champion herd and also refers to Frank B. Anderson, Fred Kiesel, and others who are not only installing pure breds but preparing for exhibit at the coming state fair.

Chicago reports good cattle steadily advancing, corn feds around 1200 and 1300 pounds commanding as high as $18.65.

Imperial Valley hog growers are selling young hundred pound feeders for 15 cents and making more money than by finishing off.

Chicago stock yards report immense increase in the proportion of old brood sows. Some figure this means great reduction in another year's output.

"Free Milk for France" is slogan of a committee organized in New York City. The committee hopes to send one ton of dry milk daily. One ton of dry milk is equal to 8400 quarts.

C. B. Cunningham, the very able and popular president of the State Swine Breeders' Association, is taking a well earned vacation at Santa Cruz. Mr. Cunningham, in addition to his regular busy days with his large fruit interests and oversight of his splendid "Biliken" herd of Chester White swine, has for months devoted a large proportion of his time to government war work for the live stock division of the state food commission. He is working days and dreaming nights for more and better hogs. His slogan is; "Fat will win the war and we can and will produce the fat."

Small packers and cattlemen are making an endeavor to secure a correction of marketing conditions of hides. It is asserted that under present arrangements large packing houses have an advantage of from $3.00 to $5.00 per head on every animal they slaughter because the tanner combine does not deal with all on the same basis.

Anoakia Diotime Korndyke, in the registered Holstein herd owned by H. E. Cornwell, Modesto, recently completed an official seven day record of 17.39 pounds butter at the age of two years and one month. She is sired by King Korndyke Pontiac, one of the sires at head of Jane Garden Farm herd owned by Fred W. Keisel, Sacramento. This heifer was given no special preparation and ran out with the herd during the seven days of her test. She is a very good individual and will probably be continued on semi-official test as Mr. Cornwell places much more weight on yearly records than on the short time ones.

The first calves by King Pontiac 20th, W. J. Higdon's $6500 son of Miss Valley Mead De Kol Walker and King Korndyke Pontiac, have arrived and they look most promising. The first one was a son, born in the A. W. Morris & Sons herd. King Korndyke Pontiac 20th himself is developing into a very pleasing individual. He will probably be seen on the show circuit this year.

Wm. Bernstein, Hanford, is getting his farm in shape to carry on the breeding of Poland-Chinas on a much larger scale than ever before, but will not show this year. This herd has made a splendid record right from the day it was founded and has been one of the factors in making Kings Coun-

THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's

Caustic Balsam

IT HAS NO EQUAL

For the Human Body — It is penetrating, soothing and healing, and for all Old Sores. Bruises, or Wounds, Felons, Boils, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Sore Lungs, Rheumatism and all Stiff Joints

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER.

Price $1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.

The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

Shorthorns

Bred for Range Purposes and of Pure Scotch Blood Lines.

Show Herd won highest honors in 1917.

Visitors welcome — information cheerfully given.

T. T. Miller

So. Normandie St., Los Angeles, Cal.

HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

REGISTERED BERKSHIRE PIGS

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee.

Careful attention given to mail orders.

Whittier State School

WHITTIER, CALIFORNIA

ROSAMAINES HOLSTEINS

King Pontiac Netherland Segis 3rd

CHOICE BREEDING STOCK FOR SALE

A. R. O. Records up to 34 lbs. Butter in 7 Days

ROSAMAINES RANCHO

Stalder Bros. RIVERSIDE, CAL.

Holstein Bulls

SIR PIETERTJE ORMSBY CANARY heads the herd. He is by Sir Pietertje Ormsby Mercedes and out of a dam that made 862.83 pounds butter in one year as a three year old, and she in turn out of a 1009.87 pound cow. His three nearest dams average 19,496.7 pounds milk and 877.29 pounds butter in one year. A few of his sons for sale.

The McCloud River Lumber Company

McCloud, California

Headquarters for

IRRIGATION

SUPPLIES
PUMPS, ENGINES,
SPRAYERS, HOISTS ETC.
Catalog FREE on Request

Smith-Booth-Usher Co.

LOS ANGELES

ty the Poland China headquarters of the Pacific Coast.

F. D. Ross, Hanford, decided at the last moment not to show his Poland-Chinas and Holsteins this year. He has a yearling boar that would strengthen any show, and some Holstein heifers that look especially good to say nothing of a senior bull calf that would be a real contender.

Holsteins in England have been doing wonders during war time and public sale prices have been steadily mounting. The latest high record sale was composed of 54 animals that sold for an average of $1910. The top of the sale was the cow Eske Hetty who sold for $17,500. She holds the milk record for England over all breeds, with a production of 2413 gallons in 365 days. She, with several others, was purchased by one of the big breeders of milking Shorthorns.

A world's record was recently established at Holywood Farm, owned by F. S. Stimson, Hollywood, Washington. The force couldn't see any chance at the moment of breaking a world's record with one of the registered Holsteins so they turned their attention to war savings stamps. The 60 employes of the farm took $9000 worth and just to make it round numbers Mr. Stimson took $1000 worth making a total of $10,000 for Hollywood Farm. This is the world's W. S. S. record for a dairy farm.

Jane Garden Farm, owned by Fred W. Kiesel, Sacramento, is on one of the most delightful roads out of Sacramento. The paved highway following the east bank of the Sacramento River has been extended several miles past the farm and work is in progress further along. There is a steady procession of automobiles past the farm particularly on Sundays, and a lot of folks are getting a mighty good first impression of pure bred Holsteins as they view the Jane Garden Farm herd from the highway, which passes above the corrals.

Pennant Wayne Clothilde, a registered Holstein heifer owned by J. H. Harlan Company, Woodland, recently completed a yearly record begun at two years one month, making 13438.3 pounds milk and 619.10 pounds butter. She is sired by Star Youth Korndkye Wayne, the first herd sire used by Dr. E. J. Weldon, Sacramento, who is the breeder of this heifer.

George V. Beckman of Lodi has a carload (87) of very even Poland-Chinas ready for shipment. They were produced on pasture and barley and will average better than 200 pounds. Another carload of young stock of the same even quality will be ready to "hog off" several acres of fine Indian corn that is "earing" out in good shape. Mr. Beckman is one of many Lodi farmers that have put down wells to help out the empty ditches.

M. A. Perkins, the cattleman of Yavapai County, Arizona, has just sold 1000 head of range cattle to Chicago buyers, the three grades of steers bringing $64, $54 and $38 per head.

The Conejo Ranch has entered two carloads of fancy pedigreed and pure bred hogs at the California state fair, one carload of 60 individual animals to be shown in practically all classes of the Hampshire and Duroc-Jersey swine; the other in the fat class and judged under the carlot division. The Conejo Ranch swine entries at the 1917 state fair captured over 40 ribbons and prizes. Conejo Ranch champions and prize winners will also be very much in evidence at the California Liberty Fair, which is to be held in Los Angeles in October. The management plans to show two carloads of pedigreed and pure bred hogs and a carload of fat hogs in the carlot class.

Prizes offered in the beef Shorthorn classes of the California State Fair's live stock show, August 31 to September 8, have been increased from $1875, as listed in the premium list, to $2187.50. The additional money is offered as the result of action taken by the American Shorthorn Breeders' Association. The association previously had agreed to pay one-third of the awards in the Shorthorn section, or $625.

Kings County's Poland-China Breeders will hold their sixth annual sale of "good ones" on Wednesday, Oct. 9, 1918. These sales are always successful. They distribute splendid

Buy the Best Blood

Duroc Jerseys

We can sell you pigs, gilts, or splendid young boars sired by the world's greatest and best sires. Their blood in your herd will make you money. I found in my last trip East that these lines of breeding were the ones that we in California should be following. My splendid herd of prize winners from prize winners can furnish you single animals or small foundation herds. They are from

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Pure Bred Stock Sales a Specialty
Sales conducted in all parts of California and adjoining States. Twenty-five Years' Experience.
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Grape Wild Farm
Berkshires
Winners of Premier Breeders' Grand Championship Ribbon at P. P. I. E. See our Display Herd at State Fair This Year.
Grape Wild Farm
A. B. Humphery, Prop.
Escalon, San Joaquin Co., California

stock at farmer prices. There is always a big crowd but not too big to be fed right royally with a regular farmer dinner. Everybody comes and everybody enjoys himself. Col. Ben A. Rhoades will officiate as usual.

Mark Bassett, J. M. Bernstein, W. L. Haag & Son, and Dimmick Brothers will show Poland-Chinas at the state fair.

Fred Ross has a fine big type junior yearling boar, Rossmead Big Bob, and some extra quality young stock. Owing to difficulty in securing labor he will not show this year. A young Holstein bull on the Ross ranch is a pleasure to look at.

The Lendorris Ranch of W. L. Haag boasts some splendid Poland-China young stock and sows headed by Young Jumbo, formerly owned by Will Bernstein. Visitors at the state fair, don't fail to see him for he's good in all almost every way.

A visit to Mark Bassett's farm is always a treat to a lover of fine hogs. This year the show is probably the best ever. The senior herd sire, Model Fellow, will be a hard one to beat in any show ring, while his get in every class are sure to bring home ribbons of the right color. The showing at the state fair will be worth going far to see. "Archie" says it is the best ever.

Dimmick Brothers of Lemoore got started as Poland-China breeders by the boys pig club route and are now among the leaders in the business. Model Wonder this year and some other good ones.

W. D. Trewhitt of Hanford will reduce his herd of Big Type Poland-Chinas Sept. 26 by selling at auction 63 head of bred sows and gilts and open gilts. Only three boars will be sold. All the offerings will be quality stuff and it's an opportunity to get some good ones.

Consignors at the sixth annual sale of the Kings County Poland-China Breeders' Association at Hanford on October 9 are M. Bassett, W. Bernstein, J. A. Crawshaw, F. D. Ross, Trewhitt Bros., J. M. Bernstein, Dimmick Bros., C. A. Vaughan, W. L. Haag & Son, C. G. De Raad, W. S. Hubbard & Son, E. G. Myer, H. D. McCune.

Dairy of Geo. E. Platt, Los Angeles County
Note cars loaded with silage for evening's feeding.

A Letter from Humboldt

ANSWERING a question as to the feeding of silage J. W. Coppini of Humboldt County, a winner of one of the California Cultivator $100 prizes in the recent state dairy cow competition, writes:

"I never had a silo nor contemplated building one. Fortunately in my locality we can almost at any time go out and cut green grass and clover until late in August. Then we depend on roots such as carrots, etc."

Mr. Coppini is also a believer in the pure bred as a means of securing greater production:

"It will undoubtedly be interesting reading to the promoter as well as to the supporter of the last state dairy cow competition to know of some particular instance where the contest did directly some good. As already stated I was the winner of the pure bred Ayrshire bull calf donated by J. W. Clise of Redmond, Washington. The calf was shipped to me in due time and in justice to the donor I must say that it was a splendid individual and bred in the purple.

"Not wishing to change breed I in turn donated him to the Red Cross, and he was auctioned off at Loleta on June 8 last. Unfortunately his good breeding was not recognized, therefore not sufficiently appreciated, and he sold for only $125.

"The purchaser was J. A. Genzoli of Loleta. Since he became possessor of the pure bred bull calf he has decided to enter in the pure Ayrshire breed, and recently purchased from Mr. Clise three two-year-old heifers safe in calf, and in a very few years Mr. Genzoli will have a fine herd of Ayrshires. As I have repeatedly said if there is one dairyman in the state that did not profit by the state dairy cow competition he must admit that it was his own fault, and much credit is due to all those that made the competition possible."

There is also in the above a hint to the breeders of pedigreed stock. Simply as an advertising proposition Mr. Clise' offer of one of his pure breds in that prize competition resulted in some satisfactory sales of other stock.

SHORTHORN ACTIVITIES

Present indications point to a most comprehensive exhibit of Shorthorns at the state fair this year, and it is probable that the exhibits will at least compare favorably with, if not excel, the wonderful show of last year. The Shorthorn men will have a get-together evening at Sacramento during state fair week to discuss plans for the ensuing year, and entering largely into this meeting will be a discussion of ideas for augmenting the output with which to supply the increased demand.

The realization of the need for more and better cattle is becoming apparent throughout the state. There will probably come before the legislature at its next session a bill requiring the use of pure bred bulls of beef type on the open ranges. It is possible that an early winter sale of Shorthorns will be held. There are two or three new herds in prospect in the state. The cattlemen of the state are well on the way to becoming thoroughly organized and as a result improved methods are becoming more generally known.

Every year hundreds of thousands of wild ducks die in the Salt Lake Valley of Utah. Government experts have determined that the trouble is due to alkali poisoning because the birds get so little fresh water for drinking.

Prince Gelsche Walker Korndyke
Shown Above

We are carefully building the best Holstein herd we know how to build, keeping in mind uniformity of breeding and blood lines that have fully proven their worth in the advancement of dairy production, and our herd and methods seem to meet with the approval of large numbers of California dairymen and breeders who have kept us sold down close on breeding bulls.

We also appreciate the demand that has come to us from long distances, including two sales in which Jane Garden Farm Holsteins take their places in the black and white army that is crossing the Pacific. We recently made these deliveries:

1—A son of **KING KORNDYKE PONTIAC** to the Japanese Government.
2—A son of **PRINCE GELSCHE WALKER KORNDYKE** to the University of Hawaii at Honolulu.
3—A son of **SIR AAGGIE DE KOL ACME** to the State of Idaho.
4—A son of **KING KORNDYKE PONTIAC** to Richmond, Utah.

King Korndyke Pontiac and Prince Gelsche Walker Korndyke are both siring calves that come fully up to our high standards, and we expect unusually good things from the offspring of Sir Aaggie De Kol Acme to whom we are breeding many of our best cows and heifers.

JANE GARDEN FARM
TRADE MARK
NEVER FAIL TO FILL THE PAIL

We would like to have every breeder and dairyman see our farm and herd, and judge for himself the high quality of our cattle and methods of handling them and conducting our breeding business.

Dairymen who want real bulls to head their herds should keep in mind that we are breeding the right sort and that our prices and terms are most liberal.

Just run out to Jane Garden Farm during State Fair week. There is a new paved road all the way and you will find it one of the most interesting drives out of Sacramento.

King Korndyke Pontiac
Is Shown Below

JANE GARDEN FARM
SACRAMENTO — CALIF.

FRED W. KIESEL
PROP'R.

C. W. YOUNG
SUP'T.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Unsigned communications receive no attention.

Worms in Puppies

Can you tell what is wrong with our puppies? My bitch has six fine puppies about two months old. They are growing some but are thin in flesh and have large stomachs. They have a good appetite and are always hungry, but their food does not seem to do them much good. Could such young animals get worms?—Subscriber, San Fernando.

It is difficult to tell how they get the worms but young puppies often have them and the symptoms are just such as you describe. It is probably the small round worms about one sixteenth of an inch thick and two or three inches long or it might be tape worms. Any of them develop very quickly once they are established in the stomach and bowels. You can cure them of either in a short time by giving powdered areca nut in a little milk. Give the six half a teaspoon of the areca nut in a pint of sweet milk in the morning before feeding anything else. Repeat this every morning for a week and longer if you think best. The areca nut is nearly tasteless and not poison so you need not fear hurting the puppies. They will lick it up with the milk and never know it is there.

Spavin

We have a four year old colt that is lame in the left hind leg. It seems to have no use of the coffin joint. It steps on the toe and is lame when it trots. Has been lame for nearly a year. We fear the joint has become stiffened. Do you think I could cure it by putting on a long shoe and using caustic balsam? I am a blacksmith.—Subscriber, Coachella.

Since you say there is no swelling the trouble is probably in the hock joint. Spavin will often cause lameness for a long time before the swelling shows. It will make them start off on the toe and limp when trotting as you describe. Or if the colt walks on the toe at all times it may be contraction of the back tendons. Contracted tendons would need a long shoe with no heels but a spavin would need a short shoe with high heels. If it is contracted tendons then blister with caustic balsam as you suggested but if it is a spavin blister with cantharides and biniodode of mercury; two drams of each mixed with three ounces of lard. Rub it in well and repeat in two weeks. You will have to decide which of the two troubles it is. When you blister keep the horse tied so he can not rub it with his nose for 24 hours so he will not get his nose blistered too, then grease it with lard and turn him loose.

YEARLY RECORDS BEING MADE AT TULARE HOLSTEIN FARM

A number of very pleasing yearly records are under way at Tulare Holstein Farm, owned by W. J. Higdon, Tulare, under the care of Harry L. Redd, herdsman.

Hertinga Willis, a six year old, has made 14,351.9 pounds milk and 558.07 pounds butter in her first six months.

Coloma Beauty Maid, the great heifer that made over 19 pounds butter in seven days as a senior yearling, is now milking as a junior three year old; at the end of five months has 10,967 pounds milk and 444.69 pounds butter to her credit and as she is a stayer should finish her year with a big record.

The outstanding record of the group on test is being made by the great junior two year old, Madrigal Mooike 2nd. At the end of six months she has 13,196.8 pounds milk and 478.98 pounds butter to her credit and is holding up splendidly even during the hot weather.

CUT OUT THE BACK TEETH

Before placing the pigs with the sow, cut out the eight small tusk-like teeth. There are four of these on each jaw in the rear of the mouth. These teeth are very sharp, and if left in the pig's mouth they will likely cause tearing of the sow's udder, and the little pigs cut one another's mouths while fighting for a teat. These teeth can be removed with bone forceps, wire nippers, or with a knife. Never pull out the teeth. Always cut or break them off. After this operation is over, place the pigs with the sow, care being taken that each one gets to a teat. When the after-birth is passed, it should be removed from the pen at once and buried or burned. There is good reason to believe that eating the after-birth is often the beginning of the habit of eating pigs.

As a rule, the sow should have no food the first 24 hours after farrowing, but should be given a liberal drink of warm water. If, however, she shows signs of hunger, a thin slop of bran and middlings may be given. The feeding for the first three or four days should be light and the time consumed in getting the sow on full feed should be from a week to ten days, depending on the size and thrift of the litter.

Let's remember in this sugar fight that the motto of Foch is "Attack," and the method of our boys, "Fight as long as the fighting is good—and then some more." So "Up and at 'em."

FOR MILKING MACHINES

Clear and Clean as Water

B-K keeps tubes and cups sweet and clean. Penetrates milk solids—kills the bacteria. Is clean—harmless—cannot taint milk. B-K makes rubber parts last longer—cannot harm metal. Used and recommended by Milking Machine Manufacturers for years. Cheapest in actual use—sold under guarantee. Get B-K today—end sour milk troubles. Send us your order and your dealer's name. Send for dairy bulletins and "trial offer."

General Laboratories—Madison, Wis.
3146 So. Dickinson St.

Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 426982, grand champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Building
San Francisco

CARRUTHERS FARMS
Mayfield, Cal.

Creamcup Holsteins Headed by the 33.92 pound bull Creamcup Champion Pontiac Burke. A few young bulls for sale. M. M. HOLDRIDGE, Rt. A. Box 437, San Jose, Cal.

Be Successful

Success in the dairy business comes only to the man who operates with good cattle, and good cattle are produced through careful selection of breeding females and the mating of them with bulls of proven breeding.

Do away with the hazards you are taking through the use of a scrub bull or one of inferior breeding, and let us furnish you with a sire that will breed real quality into your herd.

Every one of our five herd sires is a son of a world's record maker or has himself sired a world's record Daughter.

Prince Gelsche Walker
King Mead of Riverside
Sir Aaggie De Kol Acme
Segis Pontiac De Kol Burke
King Morco Alcartra

We have on hand a choice selection of sons of our herd sires, some of them of service age, and can supply the wants of the dairyman who wants a bull with real breeding at a price well within his value.

Breeders—Keep in touch with our highest record matings. We can supply you with bulls of unexcelled yearly record backing.

A. W. Morris & Sons, Corporation
Woodland, California

Dispersal Sale

W. H. Ginn & Son Herd

100 Registered 100

Holsteins

On Their Farm

Corcoran, California

Thursday, October 10, 1918

This herd is composed of mostly young animals of choice breeding and uniformly good type.

The bred females are in calf to

Aralia De Kol Pontiac Salambo

whose three nearest dams average over 30 pounds butter in seven days, over 1000 pounds in one year. He is sired by a son of Aralia De Kol and out of a daughter of King Mead of Riverside.

Every animal guaranteed to be a breeder, tuberculin tested and sold subject to retest by the buyer.

Management

California Breeders Sales and Pedigree Company

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Auctioneers: Col. Ben. A. Rhoades; Harold B. Rhoades

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Northern California Notes

Written for California Cultivator by W. S. Guilford

BARLEY GROWERS ORGANIZE

BARLEY growers of the Sacramento Valley have been expecting that the crop would bring at least $3.00 per hundred this season. The cost of everything that has entered into the cost of growing, labor, supplies, etc., has been high, and the prices of all other commodities are high. Practically all of the insurance written on barley in the field—insurance against fire—was written on a basis of $3.00 per hundred. In several conferences with the food administration barley growers report that no encouragement for a $3.00 or better price has been given, hut that they have been given to understand that the price will probably be considerably less than that.

An organization of the barley growers of the state is now heing formed, the ohject of which is to try to get a fair price for the crop.

FREE TRANSPORTATION TO STATE FAIR

It was announced a short time ago that exhibitors of live stock would not be allowed to ship stock free to the fairs, as has been the custom for years. This ruling has been changed and the free rates will he allowed as heretofore. The passenger rate will he fare and half for the round trip.

GOVERNMENT LIVE STOCK WORK

John T. Caine III., director of agricultural extension in the Utah agricultural college, has heen appointed by the secretary of agriculture as a specialist in animal husbandry in the department. The United States department is to cooperate with the states in animal husbandry extension work. Professor Caine will have charge of the western field. He is one of the big men in animal husbandry work in the United States and we will be glad to see him in California often.

WHEN TO SOW ALFALFA

Alfalfa is at a big premium this year and a big acreage will be sown this coming season. We have some land which was prepared for corn. The moisture got away too fast, and we did not get around to irrigate it. There is a splendid seed hed. We have been talking about seeding it early this fall and depending on the first rains to start it while the soil is warm. If we do this there is danger that the first rain might start it and a succeeding dry spell kill it out before more rains came. But if we wait until after the first rain, and more follow in quick succession, we might not get it sowed until the ground is cold and the winter growth of bur clover and other plants start, and the alfalfa may be choked out before it gets started. This is on river bottom land that does not need irrigation except in very dry years.

With a problem like this in mind it is natural to talk with everyone who has had experience with alfalfa. I asked Captain Jones who has a fine field near Butte City; "When is the best time to plant alfalfa?", and he said, "I don't know any hetter answer than one I got many years ago from a successful grower in Kern County. He said, 'Plant it when you get your ground ready.'"

The experience of many years in this valley shows that there have been good stands secured when the seed was planted during almost every month in the year—and likewise failures. Much depends on the seed bed, and much depends on other conditions. The only sure way to get a good stand is to keep everlastingly at it, and when a spot needs fixing up and reseeding, fix it up. The securing and maintenance of a good stand of alfalfa requires continuous work and care.

Classy Holstein Heifers
In the pastures of Alex Whaley.

MARK PIGS YOUNG

I have just been marking a litter of pigs. They were born yesterday. We use a system of notching that numbers them up to 999, and we number all of the pigs in a litter the same number. This identifies them until the end of the year, and by that time many of them are sold. Those that go into the herd are then renotched so as to prevent any confusion with the litter of the succeeding year which would have the same notches.

The time to do this notching is when the pigs are very young; it can be done the day they are born, but it should always be done within a day or two. Then there is very little blood in the little pigs' ears, and the little fellows hardly notice it. When they are older they are harder to handle; it hurts them more and there is more bleeding. The notches grow out with the ear so that a small nick or notch serves for identification.

Where hogs are not numbered with notches, but all of the hogs on a ranch get the same mark, this early marking has the same advantages as with registered animals.

CALIFORNIA GREAT BREEDING GROUND

California pure bred live stock continues to make good. At the recent fair held in Hawaii the winning aged Holstein hull was bought from Morris and is sired by F. W. Kiesel's King Korndyke Pontiac.

Berkshires shipped recently from Anchorage Farm at Orland to Idaho and Utah bring back letters of the highest praise from the purchasers.

The stock being prepared by the University Farm for show at the fairs this fall is of wonderful excellence; there is every reason to believe that

Butte City Ranch

Shorthorns, Berkshires, Shropshires, Ponies

Our cattle, hogs, sheep and ponies are grown under natural conditions—are not pampered. They make good for those who buy them. We have bought the best for foundation stock, and select breeding animals with great care. We know that it is to the interest of every one in the market for stock of the breeds we raise to write for descriptions and prices before buying.

Butte City Ranch, Box C, Butte City, Glenn Co., Cal. W. P. Dwyer and W. S. Guilford, Owners

it will uphold the reputation of the institution.

Raphael Larco of Peru has recently purchased a number of Holsteins, Herefords, Percherons and Poland-Chinas for shipment to South America.

This demand for California bred and grown stock from distant parts of the United States and of the world will continue. With the opening up of greater world trade in all lines there is a rich harvest in store for enterprising breeders of registered live stock.

THE FARMERS' SHORT COURSES AT THE UNIVERSITY FARM

The short courses will be held this year during the period September 30 to December 13. Between these dates ten different courses will be given: September 30-November 8, general agriculture (including animal husbandry), horticulture, poultry husbandry, and dairy manufactures; November 11-22, market milk production, butter making and gas tractors; December 2-13, cheese-making and milking machines (latter only on condition that 12 students are enroled prior to November 25); December 2-7, beekeeping.

A circular giving general information concerning the different courses, admission, expenses, etc., has been issued by the college of agriculture, and also the daily schedule of lectures, demonstrations, and practice periods for each day of the various courses. Both these circulars are sent free upon application.

Farmers who are so situated that they can attend one of the short courses will do well to write for copies of the circulars and post themselves as to the opportunities these courses offer for increasing one's knowledge of farming along both practical and theoretical lines. It cannot help being of great assistance to farmers who are anxious to secure better returns for their labors than in the past. With present and prospective high prices for labor and the necessities of life, the chances for making money in any branch of agriculture are rather poor unless one takes advantage of the best agricultural knowledge available and follows up to date modern methods. There is no better, cheaper, or quicker way of securing this information for the practical farmer than to attend the short course dealing with the special branch of agriculture in which one is interested. Moreover, it is a patriotic duty and backing up our boys in the trenches, to learn how to increase crop production these times, and—it will pay well.

FODDER SUBSTITUTES

A reed flour for fodder was put on the market in France this February. Reeds are also used in Germany. Their collection and sale is regulated by the government, and a maximum price of $1.25 per hundred weight is fixed. For acorns, horse chestnuts and seeds of forest trees the French government has issued full information as to use for substitutes. Acorns may be eaten by all animals, though in differing amounts. For horses, seven pints of acorns are equal to five and one-fourth pints of oats. Acorn feeding should be suspended for a week after continuous use for a month. Horses and cattle should have raw acorns crushed and the husks removed. For pigs, the acorns should be crushed into a coarse meal and mixed with cooked potatoes, or cooked with potatoes.

The use of foliage, twigs and young shoots of trees and shrubs has been largely developed in Germany since 1916. The cuttings of all trees and shrubs may be utilized, with the exception of bird cherry, laburnum, ivy, acacia and alder. The material should be collected in the winter before the buds burst. Sheep and goats can eat it unchopped; for other uses it should be cut fine in a chaff cutter and used wet or dry; but it must be kept dry if preserved at all, otherwise it will mildew. This year it will be collected officially in Germany.

The German Leaf Fodder Office states that "the young spring leaves are the most valuable for the making of leaf fodder, as the cellulose is still tender and soft and its layers supple and alive. The cells are full of life and filled to the utmost with plasma and sap. They are rich in salt, starch and sugar. Hence, it should be collected chiefly during May and June, as it contains more nourishment then than later in the summer. Ten hundredweight of leaf fodder collected in May and June contain the same amount of digestive matter as fourteen hundredweight collected in the autumn. It is also more nutritious then, gives the horses an appetite, strengthens their digestion and is good for their health." The only fodder substitute of this sort used in France to any great extent is vine waste.

Pine and fir needles have been used in Sweden, potato tops in Norway, hazel catkins have been dried and used as a sort of fodder flour in Germany, and in Austria-Hungary stinging nettles were being resorted to last January. Perhaps the strangest fodder substitute of all, however, is cockchafers, a kind of beetle which are being collected throughout Germany and Austria by school children, and are reported to be excellent food when dried, for pigs and poultry.

FRENCH LIVE STOCK LOSSES

Since the war began France has lost heavily in all classes of stock. It had on December 31, 1917, two and a half million less cattle than on December 31, 1913; nearly ten million less sheep; more than four million less hogs.

Warehouses are overflowing with barley.

DUROCS IN SAN DIEGO

R. K. Walker of the Peters, Lamson and Walker Company, writes that part of the activities of that company have been transferred to Bonita, some ten miles from San Diego, and that the place will soon be stocked up with a great number of high class Durocs. To break in the new quarters a stock of 750 feeders is being handled. Later it is expected to transfer the activities entirely to pure breds.

Italian residents of Sonoma County met at Healdsburg August 4 to protest against prohibition enactments. Formal resolution was wired to President Wilson.

A CYCLONE SILO Will Save You Big Money On Your Feed Bill

If you are in the farming business to make money you must save as well as earn—a silo will save you its cost in the first year of its use. With a silo you can convert into first-class stock feed a lot of your product that you have wasted in the past—

The CYCLONE SILO

—is constructed to stand up under the most trying conditions. Flat-iron bands encircle the CYCLONE (as illustrated) in such a way that it cannot possibly twist or warp out of shape—does not get smaller at top than bottom after usage. No guy wires to stumble over.

We, who make this silo, have been manufacturing wood tanks, wood stave pipe, etc., for use in all parts of the world for 25 years—we know our business and our guarantee that this silo is right means something.

Our Silo Feed Book Is Free—Send for Your Copy

Write us for name and address of nearest agent.

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Dear Sir: Please send me your Silo Feed Book.
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Let Us Quote You on wood stave pipe, wood tanks and allied products.

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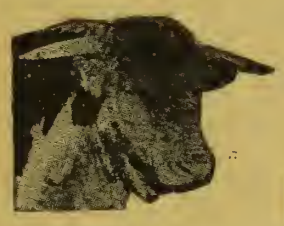
ECONOMY STOCK POWDER

Conditioner Worm Expeller Disease Preventive

For: Horses, Hogs, Cattle, Sheep

Not a Stock Food, but a Medicine. Not a Panacea, but a Remedy. Not a Medicated Salts, but purely a Medicine composed of the very best and choicest of Herbs, Roots, and Sodas. Not a Cure-All, but a genuine conditioner containing TEN different ingredients, scientifically compounded. No Oil Meal, No Bran, No Salt, No Poisonous or Harmful Drugs or Stimulants, such as Arsenic or Black Antimony that will create a false appetite.

Time will prove whether an article is good or bad. Economy Stock Powder has stood the test of time. It is no longer an experiment, but a Compound of proven merit. Over 200,000 Farmers and Stockmen are feeding Economy regularly. A trial will convince you.



ECONOMY GERMICIDE DIP

Disinfectant—Germicide—Antiseptic

Will absolutely rid your hogs of parasites, lice, mange, scurf, and improve the coat of hair. Will not injure the eyes of the animals.

FILL OUT THE COUPON AND MAIL WITHOUT DELAY

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Home Office and Factory: Shenandoah, Ia.
Eastern Office: Fort Wayne, Indiana

Economy Hog and Cattle Powder Co.
1016-1017 HEARST BLDG., SAN FRANCISCO, CAL.
Send me your booklet, "Economy-Ize Your Farm," also a free sample of Economy Stock Powder to try out on my stock.

Name .....R. F. D.....
P. O. ..... State .....
I have ..... hogs, ... sheep, ... cattle, ... horses

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COWS, HOGS AND A BANK BOOK.
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On Port Susan Bay, Snohomish County; 6000 acres of the best land that lies out doors; a 2 hours' ride from Seattle places your feet on the richest, most productive soil in the whole state of Washington; rail and water transportation; near paved roads, schools, churches, cannery and condensary; 3½ miles of waterfront and finest beach on Puget Sound; 20 miles of beautiful lake shore, surrounding 8 picturesque lakes; these lakes teem with trout. Get in on the first choice for $35 per acre and up; 10 yearly payments, 6 per cent interest
This is but the beginning of the story of Birmingham. Send to the owners for illustrated literature. BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

400 acre stock and grain ranch 3 miles Pleasant Valley R. R. station, Mariposa County, California; 100 acres cleared and tillable, nearly all of the 400 acres could be farmed if cleared of the large oak and other trees, wood sells for $12 per cord at station, 3 and 6 room house, large barn, and out buildings, black smith shop and tools, ranch fenced and cross fenced, part hog tight, hogs never have cholera here, family orchard and garden irrigated from springs. Average rainfall 29.88 inches; grapes, olives, almonds, etc. grow without irrigation, feed in pastures and free outside range adjoining knee high, elevation 1500, no alkali or hard pan, ½ mile school and church, $30 per acre including 300 goats, 3 horses, 3 head cattle, turkeys and chickens and all farm implements. $3000 cash, balance long time 7 per cent. Fred B. Palmer, owner, Coulterville, California.

For Sale—Great Ranch Bargain Near Pomona, 115 acres, part in alfalfa, good stand, balance other crops; fine pumping plant; property clear. Owners eastern parties, want immediate sale. No exchange. SNAP PRICE $41,000. Terms: Cash $11,000 and $30,000 five years, 5 per cent. Ranch products are in great demand and bring very high prices. J. A. FITCH, Pomona.

For Sale—San Joaquin Valley, 40 acres, 3½ miles to Patterson. This land is all sand silt, can raise anything. Second crop this season now growing, beans, potatoes, corn, some alfalfa. Plenty cheap water. Three room house, barn and other buildings, good well. Write me, owner, Ira Studebaker, Patterson, California.

Ranches — Large and Small, improved and unimproved in all parts of California for sale on the easiest kind of terms. Might consider other property, either real or personal as part payment. Pacific Coast Land Co., 829 Hearst Bldg., San Francisco.

20 acres deep silt land, joining good town on the South; 10 a. alfalfa, 10 a. grain; 300 feet to railroad station. Plenty of water for irrigating. Soft water piped on place. Price right. Chas. McNeely, Alpaugh, California.

For Sale—Relinquishment of 335 acres of good land in Coachella Valley near railroad. Well costing $1700. House, barn, etc. Will take $500.00 cash. Must sell at once. A. R. Marshall, 1212 Ross Street, Santa Ana. Phone Pacific 1054R.

Fig Orchards, worth $1000 per acre. 40 acres partly leveled fine fig, olive, grape land for $4250. Generous terms if buyer improves. D. J. Whitney, Exeter, California.

Dairy Farm, fully equipped, 40 acres near Manteca. 25 acres alfalfa, balance ditched and checked. $11,000; $2500 down, balance long time. Walter Buchanan, Ripon, California.

For Sale—Coachella Valley fig and date ranch. Best fruit proposition in Southern California. Bears fruit from May to January and brings top prices. A. L. Wood, Indio, California.

Be Patriotic, Raise Stock on productive government land, plainly marked on county sectional maps. $2.50 ANY county. Booklet, particulars for stamps. Write Joseph Clark, Sacramento.

Rare Opportunity — 67 acres fruits, nuts, alfalfa, etc., irrigated, tools, tractor and full equipment, every convenience. Beautiful location; $185.00 per acre, terms. Box 163, Elk Grove, California.

TREES

For Sale — Very fine Valencia trees, two year high buds; ¾ inch to 1⅛ SOUR ROOT. Also yearlings, SWEET ROOT, ½-in. to ¾-in. all very thrifty, finest soil for balling. S. R. Coate, 564 So. Los Angeles St., Anaheim, California. Pacific 403 J.

For Sale — Seed Bed Stock, Orange and Lemon Trees, and Avocado Trees of all standard varieties. Walker-Hubbard Nursery Co., San Fernando, California.

Citrus Trees — All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park, California.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

PIPE

"TESTED" and "GUARANTEED" Screw pipe, casing, valves and fittings. Riveted slip joint pipe; all sizes. New and used. "Pacific" pipe for all purposes.
PACIFIC PIPE CO.,
Main and Howard Sts., Est. 1906, San Francisco.

GOVERNMENT LANDS

Oregon, California Government Lands — Booklet free. Tells "How, Why, Where." Write Joseph Clark, Sacramento.

MACHINERY

Used Tanks, Pumps, Windmills,
Ranch Tools
Irrigation Pipe and Fittings
Gates—L's—T's
50 Brass Cylinders
Every Article Guaranteed to do as much work as new ones.
Windmills — Windmills
8 ft., $29.00; 10 ft., $39.00; 12ft., $58.00; 16 ft., $125.00. Do 6 HP. in 20 mile wind.
Pumps — Pumps
Bulldozer 18 in. stroke, $95.00; double acting Ames, $145. Old Style Single Jacks 24 in., $55.00; 2½ in. rotary, $38.00; two stage vertical B and J, $150.00; 7 in. vertical Krogh, $175.00—Fine 6 in. horizontal, $125.00.
Ranch Tools, single two 34 Gang Disc and Mouldboard, fine shape. 30 spike spring tooth harrows, some new; single double disc cultivator; 4 Killifer and orchard cultivators; 2 hand sprayers; choppers; 4 horse power gear, $40. Not everything but everything we advertise.
Tanks—Tanks. We are not advertising the biggest lot of junk in city, but real tanks, redwood and galv. Used redwoods, new and used iron tanks for less. Call, write office DEMMITT CO., 120 No. Main St. Upstairs. See for yourself. Phone 15191. Also buy anything servicable.

REMANUFACTURED PIPE
All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.
WEISSBAUM PIPE WORKS,
169 Eleventh St., San Francisco.

For Sale — HOLT CATERPILLAR — Model "18." Entirely rebuilt by factory service men. For information or demonstration address owner G. F. Blackwood, Glendora. Phone 425, or ask the Los Angeles office of Holt Mfg. Co.

Automobile Motors for Sale—These used motors in fine condition; for stationary work, pumping or for tractor. Bargain prices. Big supply. Send for catalog. Economy Auto Parts Co., 490 Golden Gate Ave., San Francisco.

Gasoline Engines, the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

MISCELLANEOUS

Our Customers Say
Eco Trailers pay for themselves. 30 to 60 days—last 10 to 20 years. 1000-lb capacity, Pneumatic used tires, $35.00; 1200-lb. up capacity, Pneumatic used tires, $45.00; 1000-lb up capacity, Solid used tires, $65.00; 1000-lb. up capacity, Solid New tires, $75.00 up; Cattle Trailers, $85.00 up.
Mail order with deposit—we will ship balance C.O.D. or call 1508 South Main street, Los Angeles. Economy Trailer Company.

Farm Letterheads at Very Small Cost—Like every farmer needs. Printed with your specially designed name, a view of your farm, live stock, poultry or agricultural products. Why be without attractive letterheads like up-to-date farmers are using when they can be had so cheaply? Write for samples. Frank E. Brown, 1377 Palm Terrace, Pasadena, California.

Fords—Get 10 miles more per gallon, with our wonderful fuel saver, and no carbon. Anyone can attach in 15 minutes. 10 days free trial. You take no chances. Agents wanted in all rural districts. You can make big money easy. Order one today. Sample $5.00. Williams Company, 829 Hearst Building, San Francisco.

For Sale—Stock Feed—Carrots, fresh and good quality of 20 acre patch, $9.00 per ton with tops, $13 per ton without tops. All f. o. b. field. I. Tawa, R. F. D. No. 2, Los Angeles.

To Reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

WANTED

An Experienced Farmer wants to lease a few hundred acres land suitable for beans and hay, either irrigated or for dry farming. He is equipped with Holt tractor, horses and farming tools. Will pay cash or crop shares as rental. Address B. L., Care Cultivator.

Wanted to Rent for a term of years a stock ranch, must be equipped, have some alfalfa land and plenty of water. I will pay cash, shares or percentage. Address W, care Cultivator.

Wanted — Man with experience in Orchard work, also good teamster who thoroughly understands cultivating orchards. Permanent job to right men. Address H. G. W., care Cultivator.

F. C. Pragnell, superintendent of the Woodside Stock Farm and "Mortimer Fleishhacker" estate, open to reengagement, Woodside, California.

Want to Hear From Owner of farm or fruit ranch for sale. O. O. MATTSON, St. Paul, Minnesota.

Write for Prices on Seeds—Cheap Sudan, Honey wanted. Box 501, Fowler, California.

SEEDS AND PLANTS

Early Amber Sorghum makes the best silage and produces the greatest tonnage per acre. Recleaned seed 9c per pound f. o. b. Stockton. Fancy recleaned Sudan seed at 18c per pound f. o. b. Stockton, in lots to suit. Aurora Seed Mill, 48 N. Aurora St., Stockton, California.

FERTILIZERS

Lime—Slaked. Corrects heavy sour soils quickly. H. B. Matthews, 495 Douglas St., Pasadena.

HOGS

BERKSHIRES GUERNSEYS
GRAPE WILD FARMS
A few fall boars left by Royal Superbus—also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
A. B. HUMPHREY,
Escalon, San Joaquin County, California.

Poland-Chinas — Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair 1916 and sire of the 1917 State Fair grand champion or I. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale I. Marsh, Modesto, California.

Superba, World's Grand Champion Poland-China boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, California.

We Pay Cash for Hogs of All Sizes, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building. Broadway 4170. 3030 E. Vernon Ave., South 2712-J. Los Angeles.

Rancho Rubio Durocs—Thirty of the finest fall gilts we ever raised. Will begin breeding May 10. Write for prices and pedigrees. Some splendid weaned boar pigs for $25.00. Elmer Lamb, Ceres, California.

"Billiken" Chesters; Service Boars—if you are needing a boar this fall now is the time to buy. Few bred sows due to farrow in October. Open fall gilts; few weaned boar pigs. C. B. Cunningham, Mills, California.

Mule Foot Hogs, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California, "The Blue Gums."

Duroc-Jerseys—A few spring boars, outstanding individuals, sired by Johnson's Defender and out of State Fair winning sows, for sale. Frederick M. Johnson, Napa.

For Sale — Registered Berkshire pigs sired by Lord Premier's Successor 11th. J. Pringle, at Oak Crest, Cahuenga Pass, R. D. 10, Box 864, Los Angeles. Holly. 14R3.

Castleview Berkshires are the typey, modern, quick-growing kind, choicest blood lines. Prices reasonable. Castleview Ranch, Berkshires exclusively, Santa Rosa.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

Duroc-Jerseys — If you are figuring on buying Durocs do not decide where to buy until you have seen the June Acres Stock Farm exhibit at the State Fair.

Poland-Chinas—A limited number sows, bred to our great boar Model Wonder, big type, straight and right. Dimmick Brothers, Lemoore, California.

Fine big smoothe Poland-China boars and gilts $20.00. Registered and crated f. o. b. Live Oak, California. A. J. Stohlman.

Duroc-Jerseys — We breed the champions. Peters, Lamson & Walker, Devore, San Bernardino County, California.

Greenwood Farm Durocs — "Size with Quality." H. C. Witherow, Palo Cedro, California.

HEWITT'S BIG TYPE POLAND-CHINA gilts and boar pigs. Hewitt & Hewitt, Dixon, California.

Registered Durocs of the big type—Cholera immune. Derryfield Farm. Odd Fellows Building, Sacramento, California.

Berkshires—A few very fine March farrow pigs, sired by Fair Oaks Champion. Fair Oaks Ranch, Willits, California.

Carruthers' Farm Berkshire Hogs—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Orland, California.

BIG TYPE POLANDS
W. H. BROWNING, WOODLAND, CAL

RABBITS

Go Into Business for Yourself — Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

A Fortune in Rabbits—Have raised the price we will pay to $8.00 per pair. Want you to raise them for us. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

Rabbits, Remedies and Supplies — Free list. Agents wanted. Caldwell Rabbit Farm, Los Angeles, California.

For Sale — Rabbits.. New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.

LUMBER

Lumber-Sash-Doors-Plumbing - Supplies —Building materials of all kinds. New and second hand "A"R.W. shingles 60c per bundle. Send list for estimates. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco.

GOATS

Toggenburg Milch Goats — Rae P. Williams, Federal Realty Building, Oakland, California.

DUCKS

Large Pekin Ducks, three for $10.00. Bonnie Doon Ranch, Hayward, California.

CATTLE

Guernseys—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Nevada Guernsey Farm, Yountville, Napa Co., California.

SHORTHORN CATTLE, SHROPSHIRE SHEEP. Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., California. W. P. Dwyer and W. S. Guilford, Owners.

Pedigreed Bull Calves, Registered $50.00, unregistered $25.00. Service bulls $75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, California.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAllister Sons, Chino, California.

Registered Shorthorns, cows with calves at foot, yearling heifers and bulls for sale. Fair Oaks Ranch, Willits, California.

Ayrshires (registered) — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

Elkhorn Farm Ayrshires—For sale young bulls of exceptional breeding and individuality. J. Henry Meyer, R. D. 2. Box 82, Watsonville, California.

Sunshine Farm Jerseys — Young bull, ready for light service, for sale. E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

REGISTERED JERSEYS FOR SALE. J. R. CARHART, FULLERTON, CAL.

POULTRY

Fall Chicks For Sale—400,000 S. C. White Leghorn chicks from free range Hoganized stock only, for delivery from July to December, at very reasonable prices. Fall chicks are most profitable—broilers in ten weeks, pullets lay at five months. We guarantee safe delivery of all chicks to destination. Shipped safely anywhere West of the Rockies. No money in advance, pay on delivery. Special prices on 500 and 1000 lots. Finest hatchery in the world. Established over twenty years. Further information write Must Hatch Incubator Company, 424 Seventh Street, Petaluma, California.

Feed High; Eggs, Meat Higher! Our 200-290 egg Leghorns, Anconas, Reds, Rocks, Wyandottes, Minorcas, ducks are more profitable now, clearing $5.00. Some greatest government trapnested hens, 280-283. Hundreds breeders, laying, younger pullets; thousands chicks weekly; reasonable, fine males $1.00 up, worth treble. James Beeson, Pasadena, California.

"Eastman's Bred-to-lay" Hoganized and trapnested Barred Plymouth Rocks. September chicks, eggs, cockerels. Fairmead Poultry Farm, Fairmead, California.

Fall Chicks — Book order now for your future meat and egg supply. Write for special circular on fall chicks. Stubbe Poultry Ranch and Hatchery, Palo Alto, California.

Chix—Barred Rocks, R. I. Reds, Orpingtons, Anconas, Minorcas, Buff, White and Brown Leghorns. Breeding Cockerels. Enoch Crews, Seabright, California.

Black Orpingtons Lay, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S Reservoir, Pomona, California.

PATENT ATTORNEYS

Patents that protect are secured through The PACIFIC COAST PATENT AGENCY, INC., Savings & Loan Building, Stockton, California; send for our little booklet on "Patents."

Patents — Copyrights, trade marks and labels registered. Solicitor of American and foreign. James R. Townsend, 712 San Fernando Bldg., Los Angeles. Phones: Home A4619; Sunset Main 347.

SHEEP

150 Half Blood Hampshire and Rambouillet ewe lambs for sale. They are good in size, sired by imported Hampshire rams. Will sell those lambs in lots to suit purchaser. Apply to Chas. Cook and Sons, Hayward, Castro Valley, R. F. D. 1, Box 98.

AGRICULTURAL IMPLEMENTS

IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches ARNOTT & COMPANY, INC.,
The Yellow Front. Established 1892.
112-118 S. Los Angeles St., Los Angeles

ENGINES

Several New and Slightly Used Engines, ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

DOGS

For Sale—Airedale pups. Pedigreed. The best all-round dogs. Whelped June 17. R. E. McCoy, Terra Bella, California.

TURKEYS

For Sale—8 White Holland Hens and 1 Tom. Also young poults. A. W. Wilson, 1289 E. Grand, Pomona, California.

R. R. Snowden
— CHEMIST —
Soil, Crop, and Orange Grove Expert
320 Stimson Building Los Angeles, Cal.
Phones: A 4017 — Pico 843 — Res. West 702
Large Experience Gets Results

Los Angeles Market

Los Angeles, August 21, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher:
Cal. Extra. Creamery 50

Dairy Exchange price past week on extras.

Aug.	14	15	16	17	19	20
'18 ...	48	49½	50	..	50	50

Rcts. wk. ending August 20, 183,100 lbs.

CHEESE

Brokers' prices:
Callfornia fresh, lb. 28
Eastern Daisies 29
Oregon triplets .....28@28½

EGGS

Exchange quotations. Prices to retallers 2 to 3 cents higher.
Fresh extras 53
Case Count 49
Pullets 46

Dalry Exchange prices past week on fresh extras.

Aug.	14	15	16	17	19	20
'18 ...	49	49	51	..	52	53

Rcts. wk. ending August 20, 1317 cases.

POULTRY

We quote to producers.
Broilers 33
Fryers 29
Hens, small, 20@22; heavy 25
Colored 25
Ducks, lb., 20; ducklings .....22@25
Roasters 29
Roosters, old 19
Turkeys .....28@33
Geese 15
Belgian Hares 14
Squabs .....30@35

LIVESTOCK

We quote cwt. f. o. b. L. A.
Corrected Wednesday morning, August 21, by the Cudahy Company.
Cattle—
Beef steers, av. 1000-1100 lbs. 12.00
Helfers, good 9.00
Cows, good 8.50
Veal Calves 10.00
Canners .....5.00@6.00
Hogs —
Av. 150 lbs. 17.50
Av. 175-225 lbs. 18.50
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers 12.50
Ewes 11.50
Lambs 16.00
Yearlings .....11.00@11.50

POTATOES

Wholesale selling prices:
New, cwt. .....2.75@3.00
White Rose, lug 1.00
Stockton Burbanks, cwt. .....3.35@3.40
Sweet, lb. .....4@5

ONIONS

Wholesale selling price, cwt.:
Globe, cwt. .....3.00@3.25
Australian Brown, cwt. 3.00

VEGETABLES

Wholesale prices:
Beans—Wax, lb. .....2½@3
String .....10@11
Limas, lb. .....3½@4
Beets, sk. 2.00
Cabbage, cwt. .....3.50@4.00
Carrots, doz. 25
Corn, sugar, lug. .....80@85
Cucumbers, lug. .....45@55
Egg Plant, lb. .....6½@7
Horseradish, lb. 15
Lettuce, cr. .....80@90
Leeks 35
Mint, doz. 40
Okra, lb 12
Onions, green, doz. .....25@30
Peas, Tel., lb. .....13@14
Peppers, Chili, bx., 50@55; Bell, lug 50
Parsley, doz. 20
Radish, doz. 30
Rhubarb, C. W. bx., 1.15; Strawberry 1.30
Squash — Summer, lug 60
Hubbard, lb. .....2½@3
Crookneck, lug .....60@65
Tomatoes, lug .....75@85
Turnips, doz. 40
Watercress, doz. .....35@40

FRUITS

Wholesale prices:
Apples, new, lug 1.35
W. Astrachan, bx. .....1.90@2.25
Gravenstein .....2.25@3.00
Bellefleurs, bx. .....2.25@2.50
Cantaloupes — Jumbo Tip Top, best, 1.00@1.25; Paul Rose, 1.25@1.50; Tip Tops and Pineapples in cabbage crates, 2.75@3.00; White Rinds, cabbage crates, 3.00@3.25; Casabas, cabbage crates, 2.50@3.00.
Crabapples, lug .....1.35@1.40
Figs, bx. 1.00
Grapes—Fresno, Thompson seedless, 3@3½ per lb., Home-growns, Malagas, 4@4½ per lb.; Tokays, 7@8 per lb.; Muscats, 3@3½ per lb.; Hamburgs, 1.25@1.35 per lug; Sultanas, 3½@4 per lb.
Nectarines, lb. .....5@6
Peaches—Elberta, lug .....90@1.00
Strawberry, lug .....1.50@1.25
Pears, Bartletts, bx. 3.00
Plums—White varieties, 6 per lb.; Satsumas, 6@7 per lb.; Kelsey, 6 per lb.; Wickson's & Burbanks, 6; French and prunes, 5@6 per lb.
Watermelons, lb. .....½@1½

CITRUS

Lemons, packed, 6.50@6.75; loose 3.75@4.00
Orange — Valencias .....7.75@8.25
Grapefruit .....2.50@5.50

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....18@20
Amber extracted 16
Fancy white comb, per case 6.50
Comb lt. amber, per case .....5.00@6.00
Beeswax, lb. .....32@34

HAY

Quotations by Nichols - Loomis Company. Prices to growers f. o. b. L. A.:
Tame Oat .....25.00@27.00
Volunteer Oat .....12.00@14.00
Wheat .....22.00@25.00
Barley .....22.00@25.00
Alfalfa .....18.00@21.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS

See San Francisco market.

San Francisco Markets

San Francisco, August 20, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:
Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.
Dairy Exchange quotations, lb.:
Extras 52
Prime firsts 49

Prices Extras past week and year ago:

Aug.	13	14	15	16	17	19
'18 ...	52	51½	52	..	52	52
'17 ...	40	41½	41	..	41½	..

Rcts. wk. ending August 19, 324,700 lbs.

CHEESE

Dairy Exchange quotations:
Cal. Flats .....27@30½
Cal. Y. Amer. 30
Ore. Y. Am. 27½
Jack Cheese, full cream 28

EGGS

Dairy Exchange quotations:
Extras 57
Selected Pullets 53½

Prices Extras past week and year ago:

Aug.	13	14	15	16	17	19
'18 ...	53	54½	54½	..	56	57
'17 ...	40½	41	43½	..	44	..

Rcts. wk. ending August 19, 8312 cases.

POULTRY

We quote to producers, lb.:
Per lb.: Large hens, 29@32; Leghorn hens, 26@29; broilers and fryers, ¾ to 1¼ lb., 42; 1½ lbs., 37@38; 2 lbs., 36; 3 lbs. and over, 35; old roosters, 20@21.
Ducks, live, 27@28.
Geese, 25.
Belgian hares, live, 15-17.
Squabs, doz., 3.50@4.00.

LIVESTOCK

Prices gross weight:
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.
Steers, lb., 9½@11½; thin, 7½@8½; cows and heifers, 6½@7¾; thin, 4@5½; calves, 8@11.
Sheep—Per lb. gross weight; Unshorn wethers, 11@11½; ewes, 9½@10; lambs, yearlings, 12@12½; milk, 14@14½.
Hogs—Hard grain fed, weighing 100 to 140 lbs., 17; 140 to 300 lbs., 17½; 300 to 400 lbs., 17.

POTATOES

Wholesale selling prices at wharf, cwt.:
River, new, cwt. .....2.40@2.65
Sweets, lb. .....4@5

ONIONS

Wholesale selling price on wharf, cwt.:
Australian .....2.00@2.10
Garlic, new, lb. .....12½@15

VEGETABLES

Wholesale selling price:
Beans, String, lb. .....4@5
Limas, lb. .....5@6
Corn, green, sk. .....2.50@3.00
Cucumbers, lug .....75@1.00
Pickling, lb. .....3@5
Egg Plant, lug .....50@60
Lettuce, doz. .....15@20
Okra, lb. .....9@10
Onions, green, bx. .....65@75
Peppers, Bell, lug, 65@75; Chili .....40@50
Peas, lb. .....8@9
Squash — Summer, lug .....75@1.25
Tomatoes, lug. .....50@1.00

FRESH FRUITS

Apples — Gravenstein .....1.25@2.75
Bellefleur .....1.25@1.95
Avocados, doz. 2.50
Bananas, lb. .....7@7½
Berries — Ch.: Strawberries, 7.00@9.00; blackberries, 6.00@7.00; loganberries, 7.00@8.00; raspberries, 10.00@12.00; fy., 13.00.
Cantaloupes — Turlock ponies, 1.25@1.50; standard, 1.60@1.75; flats, 50@75; casabas, doz., 1.75@3.00; Persians, doz., 1.75@3.00; Honey Dew, cr., 1.00@1.25; lugs, 75@1.00.
Crabapples, small bx. .....50@60
Fig, bx.: Sonoma, double layer .....1.50@1.75
Grapes, Seedless, cr. .....75@1.00
Black Prince .....75@1.00
Malaga .....75@1.00
Tokay .....1.25@1.50
Nectarines, cr. .....1.00@1.75
Peaches, bx. .....60@1.00
Pears, Bartlett, bx., 1.00@2.75.
Plums — Cr.: Burbank, Satsuma, American Blond, 1.25@1.50; Gros, Kelsey, Japan, Grand Duke, Diamond and Hungarian, 1.50@1.75.
Pineapples, doz. .....4.50@5.00
Watermelon, lb. .....1½@2

CITRUS

Lemons, bx., fy., 7.00; ch. 5.00@6.00; standard, 4.00@5.00; lemonettes, 3.50@4.50; oranges, 7.00@8.00; grapefruit, 4.00@6.00.

BEANS

Jobbers' prices, cwt., recleaned:
Limas .....13.10@13.25
Bayous .....7.75@7.90
Small Whites .....Nominal
Large Whites .....Nominal
Mexican Reds .....7.75@7.90
Blackeyes .....6.75@7.00
Pinks .....7.00@7.15
Red Kidney .....Nominal
Cranberry .....Nominal
Teparies .....8.00@8.25

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....17@20
Amber extracted 16
White comb, cs. .....4.50@6.00
Light amber comb, cs. .....3.50@4.00
Beeswax .....32@34

HAY

Under date of August 17, Scott, Magner & Miller says:
Receipts past week, 2184 tons. The market is still heavily stocked and it has been difficult to dispose of arrivals satisfactorily. Considerable hay has had to be left on the tracks longer than the free time allowed by the railroads and has therefore been subject to demurrage charges. This causes trade to be extremely dull and to place any quantity with consumers it necessitates cutting of prices which under the present conditions dealers are very backward about doing as all the hay arriving is that which has been purchased in the country districts at the high range of prices demanded by farmers throughout the summer months and to cut prices means a positive loss in most cases to the consignees.
Alfalfa is arriving freely from the river districts together with considerable of the interior hay coming in by rail. Demand for this has also decreased, no doubt owing to the high prices. Considerable newspaper reports have appeared regarding demand for straw during the week, but as far as this city is concerned there is practically no straw being used or sought. The market is simply nominal.
We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market — for prices to consumers charges of cartage, commission and handling must be added according to conditions:
Fancy Wheat Hay
(large 5 wire bale) .....26.00@27.00
No. 1 Wheat or Wheat and Oat Hay .....23.00@25.00
No. 2 Wheat or Wheat and Oat Hay .....20.00@22.00
Choice Tame Oat Hay .....24.00@26.00
Other Tame Oat Hay .....21.00@23.00
Wild Oat Hay .....19.00@23.00
Barley Hay .....19.00@23.00
Alfalfa, first cutting .....16.00@20.00
Alfalfa, second cutting .....22.00@24.00
Stock Hay .....18.00@21.00
No. 1 Barley Straw, bale .....50@80

GRAIN AND FEED STUFFS

Wheat—Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard white—	Per cental.
No. 1	3.66⅝
No. 2	3.61⅝
No. 3	3.55
Soft white—	
No. 1	3.63⅜
No. 2	3.58⅜
No. 3	3.51⅝
Club and Sonora—	
No. 1	3.60
No. 2	3.55
No. 3	3.48¾

For sacked grain add 9 cents per bushel of 60 pounds to above prices. Deduction of three-fourths of a pound is made for weight of standard grain bag. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to its merit.
Barley — No. 1 feed, 2.37½@2.45 per cental; milling, 2.55@2.60.
Oats — Red feed, 2.55@2.65 per cental for ordinary and 2.75@2.85 for choice; seed do, 2.90@3.10, with recleaned at 3.20@3.40; black, 2.50@2.65 for feed and 3.00@3.25 for seed; do, recleaned, 3.60@3.75.

SEEDS

Prices in round lots, lb.:
Millet, recleaned .....5@5½
Flax .....8@8¾
Hemp .....5½@6
Rape .....2½@5

Citrus Fruit Market

Los Angeles, August 21, 1918.

Valencias are still selling at long prices with no indication of weakening or reduction. This, notwithstanding this is the period of lightest demand. Shipping has also been lighter than usual.
Florida's new crop will begin going to market about October 1. Its estimates call for 5,000,000 boxes of oranges and 5,000,000 boxes of grapefruit.
California grapefruit is demanding better prices and its high quality is making for future markets. Lemon market is exceptionally strong.

Shipments

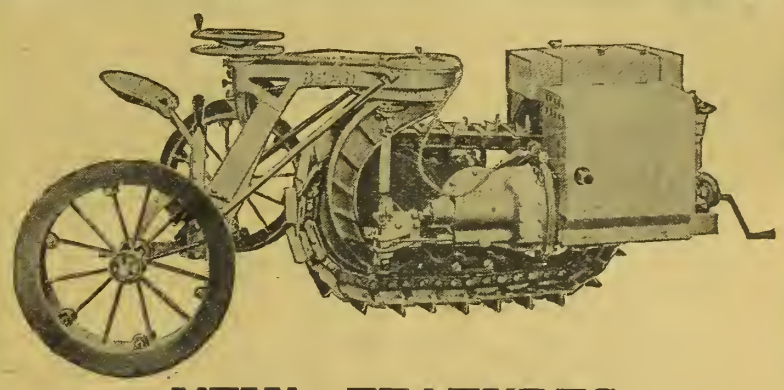
Shipments of citrus fruits to date since November 1, 1917; Southern California; oranges 13,010 cars, lemons, 5018, total 18,028. To same date last season, oranges 36,420, lemons 7235, total 43,655. Central California this season; oranges 2536, lemons 115, total 1650. Last season to same date; oranges 4665, lemons 164, total 4819. Northern California; oranges 203, last year same date 845.

August 19
New York: 11 oranges, 3 lem. 2 grapefruit. Val. 5.05-9.75, lem. 7.10-8.25, grapefruit 3.95, halves 1.60-2.95.
Pittsburg: 2 Val., 5 lem. Lemons lower. Val. 3.90-8.80.
St. Louis: 1 Val., 2 lem. Val. 6.15-7.50, lem. 3.25-7.70.
August 20
New York: 8 oranges, 2 lem. Val. 6.75-9.75, lem. 7.65-8.10, grapefruit 2.50-3.10, halves 1.50-1.75.
St. Louis: 1 car oranges and grapefruit, 1 lem. Val. 3.85-7.50, grapefruit 1.60-2.30, lem. 5.00-5.30.
Boston: No sales, no receipts.
Philadelphia: 2 oranges, 2 lem. Val. 6.10-9.40, lem. 7.15-8.90.

WEATHER CONDITIONS

San Francisco, Cal., August 17, 1918.

Stations	Rainfall Wk.	Rainfall Season.	Rainfall Norm.	Temp. Max.	Temp. Min.
Eureka	.18	.38	.14	64	50
Red Bluff	.12	.12	.00	92	58
Sacramento	.00	.00	.00	86	54
San Francisco	.00	.00	.01	68	54
San Jose	.00	.00	.02	82	52
Fresno	.00	.00	.00	92	56
San Luis Obispo	.01	.01	.03	76	50
Los Angeles	.00	.11	.00	76	58
San Diego	.00	.03	.00	74	62



NEW FEATURES

1919 Bean TrackPULL Tractor

Important improvements embodied in the 1919 "Bean" increase its efficiency by adding from two to ten times the wear resisting strength of the parts affected. The 1919 Bean TrackPULL Tractor is the same design as the 1918 model, save for these valuable new features.

These improvements added to the long proved design of the "Bean" make it a marvel of reliability and efficiency.

1919 Valuable Improvements

1. Motor—Improved oiling system. Improved carburetor control.
2. Track Rollers—Provided with hardened steel thrust bearings.
3. Drive Sprocket—Solid steel ring, machine cut hardened and heat treated assures long service.
4. Bearings—Provided with improved dust protected greasing facilities.
5. Rear Wheels—Provided with dust cap, wear resisting bushings and improved greasing facilities.

These, and many other features, are fully described in our new tractor catalog. Send for a copy before selecting your tractor.

See the 1919 model "Bean" at the Sacramento State Fair, August 31st to September 8th.

Bean Spray Pump Co.
Dept. J, San Jose, Calif.

Player Music Rolls

Send for Our Catalogs

We carry the largest stock of Player Music Rolls on the Pacific Coast. We have in stock all the new music. We get the hits as fast as the manufacturers make them into player rolls.

We issue a Monthly Bulletin listing only the real hits and the prices—the Bulletin is sent free and without obligation to purchase. We will gladly add the name of any Player Piano owner, upon request.

Write and ask us about our "On Approval" plan of buying Player Music.

When writing please state whether your Player Piano is a 65 note or an 88 note instrument.

We invite you to call at any of our stores—or write us asking for illustrated catalogues and prices.

We are dealers in Steinway and other Pianos, Pianola Pianos, Aeolian Player Pianos, Player Music, etc.

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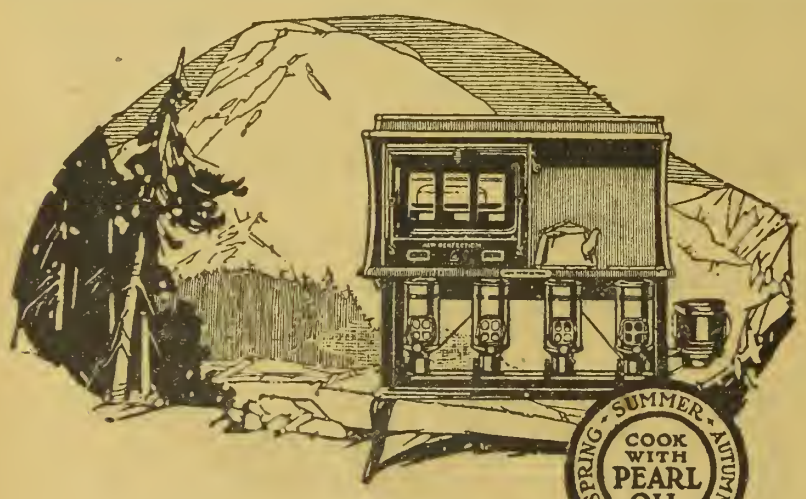
190-192 S. First Street, San Jose

Stores also at Portland, Seattle, Tacoma, Spokane



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More convenient than coal or wood. Lights at the touch of a match and heats in a jiffy.

No smoke or odor; no dust or dirt. Economical.

And all the convenience of gas.

A New Perfection Oil Cook Stove means kitchen comfort and convenience. Ask your friend who has one. Used in 3,000,000 homes. Inexpensive, easy to operate. See them at your dealer's today.

In 1, 2, 3 and 4 burner sizes, with or without ovens or cabinets. Ask your dealer today.

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Household Department

AMERICA'S STARS

Written for California Cultivator
By Ella Williamson

When France first heard the coming storm
And felt its heated breath;
When over her beloved land
The lightning flash of death
Spread its destruction far and wide
O'er valley, hill and plain;
The cry arose; "They shall not pass,
The tyrant for his gain."

And like the oak she bore the test.
Deep rooted, firm she stands,
Though bent and bleeding from the foe
She still defends her lands.
But through the war clouds hanging low,
Hope shed her light afar,
For, breaking through the gloom, she sees
America's wondrous stars.

A million stars appeared in sight,
And millions more will rise.
O France, take heart; thy succor comes;
Their splendor clears the skies.
You'll rise from ruined homes again,
Unfettered safe and free.
Your children's voices then shall ring
With joy and liberty.

THE SEQUOIA NATIONAL PARK

AND they said, Go to, let us build us a city and a tower whose top may reach unto heaven."

Thus is recorded, in the eleventh chapter of Genesis, the building of the Tower of Babel. While this tower was doubtless still standing, and a hundred years or two before the birth of Abraham, a tiny seed in the warm soil of a mountain slope on quite the opposite side of the world thrust into the light of day a slender green spike which was destined, during an existence of more than four thousand years, to become itself a lofty tower; noble in form, "with a physiognomy almost Godlike," as John Muir puts it, pulsating with life to its topmost leaflet more than three hundred feet above the ground, and giving forth a babel of bird song to the accompaniment which the summer winds played upon its many millions of tiny leaves.

On the stump of this prostrate sequoia tree, one of the noblest of the celebrated Big Trees of California, John Muir counted more than four thousand rings, a ring for every year of its life. Its trunk, exclusive of bark, was thirty-five feet eight inches in diameter. As the bark of the very largest sequoias is two feet or more in thickness, this giant must have measured forty feet in diameter when it was still growing on one of the slopes of the Kings River.

In the Sequoia National Park, upon the upper slopes of the Sierra Nevada Mountains in central California, and in the little General Grant National Park six miles away and under the same management, grow 1,166,000 sequoia trees, of which 12,000 are more than ten feet in diameter. Some of the others have these dimensions:

General Sherman Tree: Diameter, 36.5 feet; height, 279.9 feet.

General Grant Tree: Diameter, 35 feet; height, 264 feet.

Abraham Lincoln Tree: Diameter, 31 feet; height, 270 feet.

California Tree: Diameter, 30 feet; height, 260 feet.

George Washington Tree: Diameter, 29 feet; height, 255 feet.

William McKinley Tree: Diameter, 28 feet; height, 291 feet.

Dalton Tree: Diameter, 27 feet; height, 292 feet.

There are sequoia trees of great size in several other parts of California also notably in the Yosemite National Park, where three distinct groves are found; but by far the greatest number, and the individual trees of greatest size, are in the Sequoia National Park and its litle neighbor.

It is extremely difficult to realize what the dimensions of these trees really mean.

To visualize as best you can the greatest of those now standing, the General Sherman Tree, measure off and stake its diameter, 36 feet 6 inches, upon the ground in front of a church the height of whose steeple you can readily asecrtain. Then stand back a distance equal to the height of the tree, 280 feet, and look hard at the stakes whose distance apart represents the thickness of the trunk.

Now raise your eyes slowly, imagining this trunk rising in front of the church, tapering very slightly as it rises. When you are looking upward at an angle of forty-five degrees from the spot where you are standing (and this will not be difficult to calculate) you will be looking at the point where the top of the General Sherman Tree would be if it were growing in front of your church instead of in the Sequoia National Park. The known height of the steeple will help you verify this calculation.

It will help your comprehension of the great size of these trees to know that a box big enough to have easily held the ill-fated ship Lusitania, one of the largest ever built, could be made from inch boards sawed from any one of these great sequoias, with boards enough left over to build a dozen houses. Automobiles and six-horse teams have been driven up and down the fallen trunks of several great sequoias, and there are regular wagon roads running through gaps in the trunks of others in our national parks. Two parallel street car lines and a driveway might be run through

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Use the wind for pumping

-costs $1.65 a year

ECLIPSE Wood Windmills will do your pumping and save you a lot of money each year. They have been sold for 50 years and we know of farmers who have

ECLIPSE MILLS
—over 38 years old

still pumping *today—with no repair bills.* That means reliable water supply for 38 years at about $1.65 a year, figured on actual yearly service—not first cost.

The ECLIPSE is a time tried mill. Its solid construction makes this pumping record possible. Automatically turns in and out of wind—practically storm-proof. Direct stroke, no gears—but little friction—noiseless—needs only occasional oiling.

Talk over the ECLIPSE Mill and Tower with your dealer and you'll buy an ECLIPSE—like thousands of other farmers.

FAIRBANKS, MORSE & CO.
Chicago, Illinois
Manufacturers

the trunk of several of the very largest.

But the age of the sequoia is still more difficult to realize. It is beyond compare the oldest living thing.

Several of the trees now growing in hearty maturity in the Sequoia National Park were vigorous youngsters before the pyramids were built on the Egyptian desert before Babylon reached its prime. Hundreds of them were thriving before the heroic age of ancient Greece—while, in fact, the rough Indo-Germanic ancestors of the Greeks were still swarming from the north. Thousands were lusty youths through all the ages of Greek art and Roman wars. Tens of thousands were flourishing trees when Christ was born in Bethlehem.

But with all its vast age, the sequoia today is the embodiment of serene vigor. No description, says Muir, can give any adequate idea of its majesty, much less its beauty. He calls it nature's forest masterpiece. He dwells upon its patrician bearing, its suggestion of ancient stock, its strange air of other days, its thoroughbred look inherited from the long ago. "Poised in the fullness of strength and beauty, stern and solemn in mien, it glows with eager enthusiastic life to the tip of every leaf and branch and far-reaching root, calm as a granite dome, the first to feel the touch of the rosy beams of morning, the last to bid the sun good night."

The sequoia is regular and symmetrical in general form. Its powerful, stately trunk is purplish to cinnamon brown and rises without a branch a hundred or a hundred and fifty feet—which is as high or higher than the tops of most forest trees. Its bulky limbs shoot boldly out on every side. Its foliage, the most feathery and delicate of all the conifers, is densely massed. The bright green cones are about two and a half inches long, generating seeds scarcely more than an eighth of an inch across. The wood is almost indestructible except by fire. Fallen trunks and broken branches lie for centuries undecayed and almost unaltered.

The sequoias are the glory, as they were the cause, of the Sequoia National Park. Scattered here and there over great areas, they cluster chiefly in thirteen separate groves, and it is in these groves that they attain their greatest size and luxuriance.

But they are by no means the only attractions of this national park, which many frequenters declare nature has equipped best of all for the joys and pleasures of mountain living.

It is the ideal place to camp out. It is a country of magnificent mountain scenery, easily accessible when once you are in it. Its peaks are among the loftiest, its canyons among the deepest and most romantic. Its summer temperatures are even and bracing. Its summers are practically without rain.

Across its borders north and east opens up a mountain region, on the crest of the Sierra, of unexcelled grandeur. Mount Whitney, the highest mountain in the United States, 14,501 feet, lies upon its eastern boundary. The Kings and the Kern rivers have few scenic equals. These and its many other rushing streams abound in trout.

CONTAINERS OF CANNED AND DRIED FOOD

Do not use tin containers that cannot be made airtight or are likely to rust. Much spoilage has been caused by these defects. Use non-tin containers as much as possible. The world's tin supply has been practically stationary for some years, while the demand has grown immensely. Next year the army and navy requisitions of canned goods may be so great that much less tin will be available for household use.

Wide-necked bottles and seal stone containers—will take care of everything except large fruit canned whole. Your grocer may be able to furnish discarded candy buckets and butter tubs for salting down vegetables. Many containers in which commercial food products have been bought are suitable for storage of home products. If you find you have more containers than you need, share with your neighbors.

Bottles—Narrow-necked bottles may be used for fruit juice, tomato paste and catsup. Wide-necked bottles are suitable for preserves, pickles and vegetables. Fruit and vegetables bottled, corked and sealed with sealing wax keep if the usual canning directions are followed.

Boxes—Tin, wood and pasteboard boxes may be used for storing dried fruits and vegetables after they have been properly conditioned. If a large box is used, place the dried vegetables in small paper bags carefully tied and brushed with paraffin before storing in boxes. Paste paper over the edges of boxes to protect from insects and moisture. Label all packages.

Cans—Pressure lid cans, coffee tins and lard buckets with tight covers are excellent for dried fruits and vegetables. Condition all products carefully before storing. Paste thin paper over the joints.

Jars—If jam is put up in glass jars with metal screw tops, cover the fruit with paraffin and place cardboard and wax paper in the cover. Stone jars in which fruit butter is sold have fitted lids and can be resealed with sealing wax. Wide-mouthed stone jars should be used for the last fruit in autumn. Use these preserves first in winter.

RED CROSS DOGS

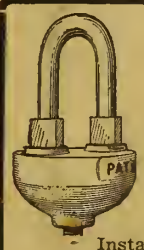
A letter from a young Harvard man in the American ambulance service in France which is quoted in the New York Sun, gives an interesting glimpse of the wonderful cleverness of the war dogs.

Last evening, he writes, a couple of fellows came round to see us, bringing with them two of the famous Red Cross dogs. We were anxious to see them work, and so I ran off and hid in some bushes.

Lying down, I placed my cap under me so that the dog could not find it. They sent one of the dogs out to find me. He finally discovered me; and as he was unable to find my cap, he put his nose in my pocket and pulled out my handkerchief, which he took back. A few minutes later he led his owner to the place where I lay.

They told us that this dog saved 150 lives in one day during the battle of the Marne.—Youth's Companion.

Housework may be made attractive to the little girl, and the mother who fails to impress the importance of domestic science on her child is robbing her of her chance for future happiness.



Fuel Relief Permitting Thrift

It has always remained for the simple little things to solve the big problems. It's the "Now, why didn't I think of that myself" sort of thing that is always doing the wonderful that seemed so impossible.

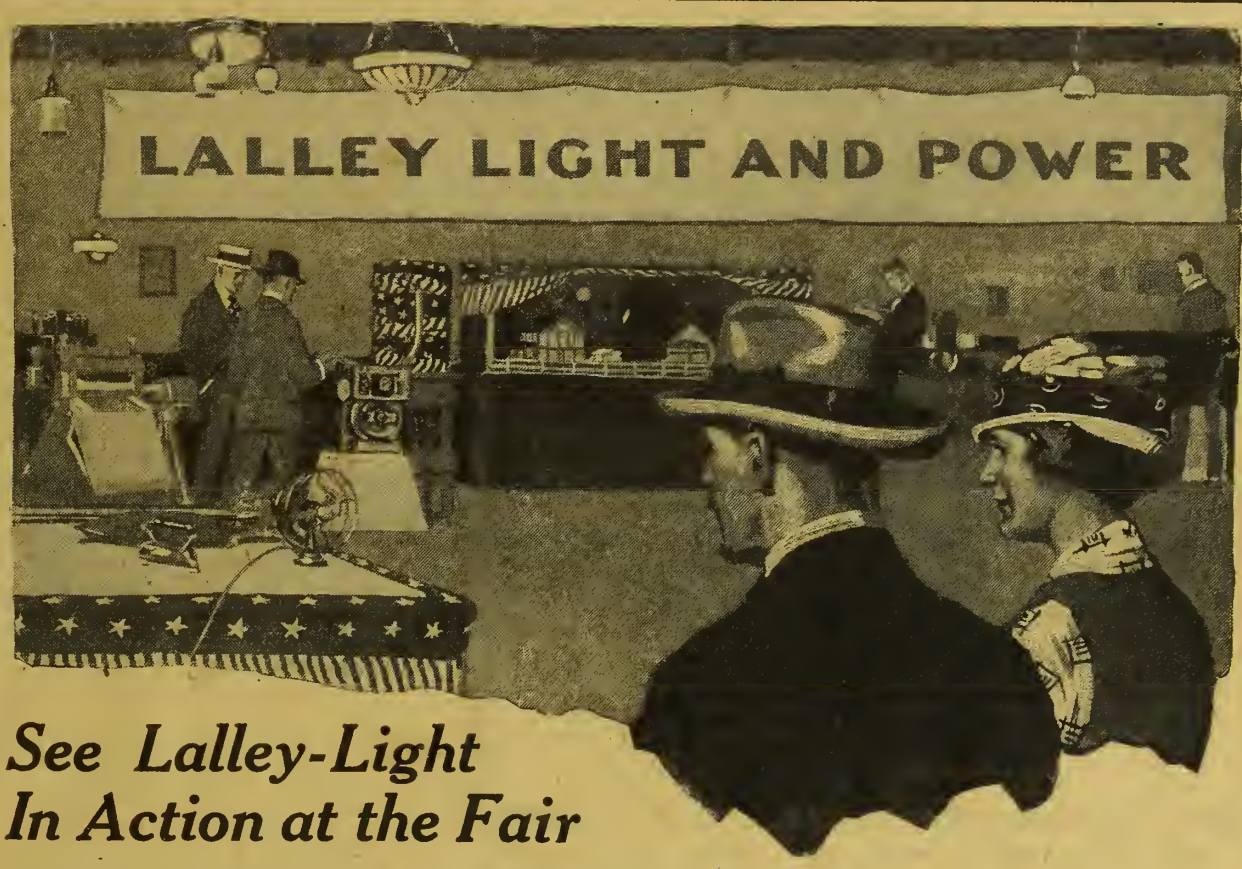
That is how "the simplest thing in the world" was discovered—the Premier Burner—and now after all these years of effort and "false alarms" in home gas makers, it has remained for this simplest of them all to solve the problem.

Installed in the stove without the aid of a plumber or any changes being made, operated on gravity feed and producing a clean gas that results in a bright, clear flame carrying the highest degree of heat units—all from just common kerosene oil and a simple little $5.00 burner—is it any wonder that people marvel, that users are our best advertisers and that it has been necessary to increase our output many times?

Those interested in real fuel thrift—more heat for less money—avoiding a difficult situation and accepting one of clean abundance furnished by kerosene and a **Premier Burner**, write for Free Circular "D." Burner for cook stove or heater by parcel post prepaid to any address upon receipt of $5.00. Full instructions and a wide-open guarantee with every burner.

PREMIER BURNER CO.

Home Office and Factory, 246 South Spring Street, Los Angeles, Calif.



See Lalley-Light In Action at the Fair

Lalley-Light will be exhibited, and in operation, at most of the county and state fairs this fall.

We ask you to note particularly the way it runs, and the character of the electric light and power it produces.

If you will do this, we count on the plant itself to convince you of the superiority it has proven in eight years of every day farm use. You probably will be impressed, first, with its extremely smooth running; and the fact that a low hum is all you hear when it is running.

You will see that the electric lights are strong and steady all the time — without even a suggestion of a flicker.

You will observe, also, the same steady flow of power to the electrical machines which may be exhibited.

The men in charge will explain that Lalley-Light furnishes light and power from two sources—the storage battery; and the generator, independently of the battery.

That means with Lalley-Light you are doubly sure of having light and power.

Even if you are not of a mechanical turn, you can't help admiring the unusual simplicity of the plant, and its very compact design.

We urge you to study Lalley-Light, because it points the way to a great saving of farm labor and an equal increase of comforts and conveniences on the farm.

Next year the farmer's need for Lalley-Light's reliable, economical power and light will be even greater than this year.

You should prepare now to meet that need.

If Lalley-Light should not be displayed at your home fair, write to us for details and name of the nearest Lalley-Light merchant.

Lalley Electro-Lighting Corporation

774 Bellevue Ave. Detroit, Mich.

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Generating plant is 27 inches long, 14 inches wide, 21 inches high. Storage battery is included in complete outfit.

LALLEY-LIGHT

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Boss of the Road Overalls hand you value that counts — in work-service, in work-comfort, in work-manship.

Loose-cut and full-fashioned so as to meet every strain, twist or pull. Over-sized where the tug hits hardest. That's why they stand the gaff longer—why they give you a new slant on overall value and clothes-economy.

Look for the Bull Dog on the label. It is your protection. Never has this trade mark meant so much to you as it does today.

Buy them from your local dealer

NEUSTADTER BROS.
San Francisco Portland

Toughest indigo denim—best union workmanship.

Big, swinging pockets—roomy but not baggy.

Double-stitched seams; hold-fast, patent buttons.

Giant Bar Pocket Stay—prevents pocket ripping.

High cut from crotch to waist insures perfect fit.

Wide cut legs—so you can wear 'em comfortably over woolen pants.

Experts Say
"ZEROLENE IS BETTER"
—because it holds better compression, gives better protection to the moving parts and deposits less carbon.
Zerolene is the correct oil for *all types* of automobile engines—the correct oil for your automobile.
Get our Lubrication Chart showing the correct consistency for your car.
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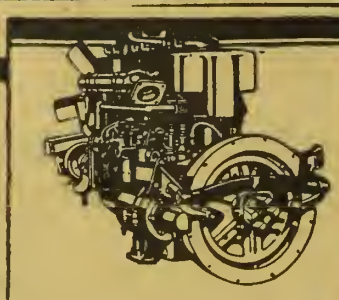
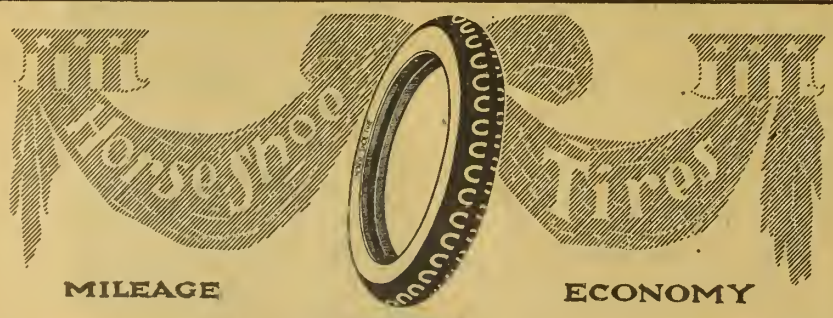
(California)



The "T"-Head type engine, illustrated here, like all *internal combustion engines*, requires an oil that holds its lubricating qualities at cylinder heat, burns clean in the cylinders and goes out with exhaust. Zerolene fills these requirements perfectly, *because it is correctly refined from selected California asphalt-base crude.*

ZEROLENE
The Standard Oil for Motor Cars



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DEALERS EVERYWHERE

Hauser's Digester Tankage
GIVES GREATEST VALUE FOR LEAST MONEY
IT MAKES THEM FAT
Hauser Packing Co. Los Angeles

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Egg Machines

Written for California Cultivator By Jean A. Koethen

NOBODY would ever think of calling one of our good old Orpington or Plymouth Rock hens an egg machine. A cheerful producer of eggs she certainly is, doing her bit summer and winter, a devoted mother, incubating and brooding the rising generation with the tenderest care, a loyal and intelligent (yes, that is the word, in spite of the jokes of the scornful) member of the family, and withal a toothsome fryer in her callow youth, an inviting potpie in her old age and a delicious roast all the way between, but an egg-machine never. That honor is left to the flighty females of the so-called Mediterranean breeds.

One of the fundamental differences between the Mediterranean breeds, i. e. Leghorns, Anconas, Minorcas, Andalusians, Spanish and Buttercups, and those we have been considering is that the latter are not made breeds. When they were imported to this country from Italy and Spain they were very much such birds as they are now. Improvements have been made, especially in the Leghorns, but the Anconas we see in the shows are very like those which foraged about the little homes in the province of Ancona a hundred years ago.

According to the best authorities, the first recorded exportation of Leghorns from Europe to the United States was in 1834, nearly ten years before the first Cochins arrived. These birds are known to have been bred in Europe under the name "Italiens" some years before this, but the name "Leghorn" seems to have been given them after they reached America solely because the ship which brought them came from the Italian city of Leghorn and no better name for the birds was known. If the importer or breeder who gave them the name could have seen the far-reaching popularity to which this breed was destined he would hardly have been satisfied with the name of an obscure Italian town.

The first Leghorns imported into this country were of the Brown variety, and they seem to have led in popularity for at least fifty years. As late as 1896 they were classified as follows as to popularity and merit: Brown, first; White, second; Black, third; Dominique, fourth; Buff, fifth; Silver Duckwing, sixth. By 1904 the tide had turned and since then the Whites have rapidly risen in favor. They are the commercial egg breed par excellence and are kept wherever hens are kept in large numbers.

The Ancona is simply the common fowl of Ancona, Italy. Those exhibited in America are all black, mottled or spangled with white, but in Italy they are of several colors.

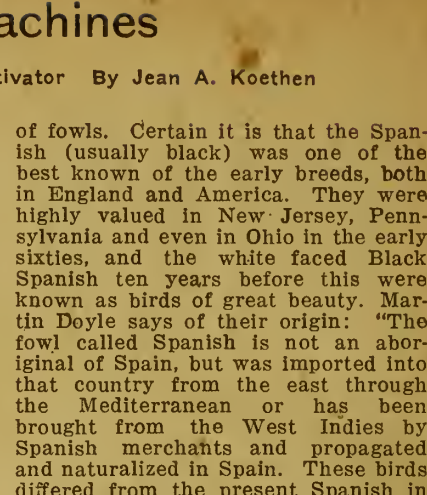
The Minorca may have had its origin in the Island of Minorca, but it was bred in England sixty years ago as the Black Spanish, red faced Black Spanish or Portugal fowl, and was long a favorite in Cornwall, Devonshire, Surrey and Sussex because of its remarkable prolificacy. The Minorca of today is larger than the old English Minorca, and this increase in size is due, it is said, to an infusion of Black Orpington and Black Langshan blood. The Minorcas, like the other Mediteranean breeds, are non-sitters and layers of white eggs, but the eggs are larger than those of most breeds.

The origin of the Andalusian is not clear. Mr. Weir, who has spent many years investigating the development of the various English and American breeds, made a trip to Andalusia in Spain to find out whether any blue fowls were indigenous there. He found blacks, whites, browns, reds and speckles, but no blues. The fact that some blue fowls were found in parts of England where they had evidently been bred for many years by other names complicated the problem, and he finally concluded that, since it is well known birds of a slaty-blue color are often the result of a black and white cross, these blues were probably originally produced from a cross of Black and White Spanish and were afterward gradually developed to a somewhat different type.

One of the earliest poultry writers, Bonnington Mowbray, writing in 1816, mentions the Spanish as one of the true varieties of the common species of fowls. Certain it is that the Spanish (usually black) was one of the best known of the early breeds, both in England and America. They were highly valued in New Jersey, Pennsylvania and even in Ohio in the early sixties, and the white faced Black Spanish ten years before this were known as birds of great beauty. Martin Doyle says of their origin: "The fowl called Spanish is not an aboriginal of Spain, but was imported into that country from the east through the Mediterranean or has been brought from the West Indies by Spanish merchants and propagated and naturalized in Spain. These birds differed from the present Spanish in having a smaller and less white face, darker feet and shanks. We find that previously to the introduction of the bird in question a diminutive species known as the Manx was the common class of fowls reared in Spain. These two breeds were crossed together, varieties were thus raised, and the present subvarieties of the Spanish fowl are partly the result." Lewis Wright, on the other hand, thinks they almost certainly came from the Spanish peninsula.

The Sicilian Buttercup is the last breed imported from the Mediterranean countries, and came, as its name indicates, from Sicily.

So much for the Mediterranean breeds. When we are speaking of egg machines, however, another breed and one that by reputation excels them all, must be included. This is the Hamburg. "Long before what we call fancy fowls were known or recognized," says Mr. Weir, "in fact, long before the memory of any person now living, Hamburgs were kept and bred to feather among the peasants of Yorkshire and Lancashire in England, and by them exhibited at the small town and country fairs in their neighborhood. Of course, they were then known under different names, the Blacks being called Black Pheasant Fowls, and the spangled varieties Lan-


Eggs all through the MOULT!
SHORTEN the moult and lengthen the laying. Globe A-1 Mash (dry buttermilk added) will do it. The live lactic acid bacilli in the dry buttermilk will keep your flock in glowing health: (bulletin 162 U. S. Agr. Exp. Sta., Berkeley).
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POULTRY FEED
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A Killer of Lice and Mites
Devils Dust has been tried and proven by long usage, thousands and thousands of packages have killed millions and millions of lice and mites.
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"Sodium Fluoride, recommended by the U. S. Department of Agriculture as highly efficient in destroying lice on poultry, is the principal ingredient in

Talbot's Chicken Lice Powder

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It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards six times they will not be affected by mildew or red spiders.

FLEUR DE SOUFRE AND ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand, packed in double sacks, are the fluffiest and purest sulphurs that money can buy; the best for orchards and vineyards; the best for bleaching purposes, LEAVING NO ASH.

Try our new brand of VENTILATED Sublimed Sulphur, 100 per cent pure, for making Paste—Atomic Sulphur and for dry dusting.

For Lime Sulphur Solution, use our DIAMOND S BRAND Refined Flour Sulphur, which we will furnish at a price so cheap that you cannot afford to purchase ready-made solutions.

We are equipped to make immediate shipment. Send for illustrated booklet; also price-list and samples.

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100,000 feet New and Second-hand Pipe and Casing.
Pipe—½, ¾, 1, 1½, 2, 2½, 3, 3½, 4, 4½, 5, 6, 7, 8, 9, 10, 11, 12, 15 Inch.
Casing—3, 3¼, 3½, 4, 4¼, 4½, 5, 5½, 6, 8, 10, 11, 12, 14 Inch; 2000 feet 6⅝-inch 20-lb. tan thread.
Riveted Pipe—4, 6, 8, 10, 12, 14, 16, 18 Inch.
All above pipe and casing is practically as good as new, with good threads and couplings on each joint. We also carry valves and fittings, pumps, engines, boilers and rail. See our stock and get prices before buying elsewhere.

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Phones: F 1917; Bdwy. 1264.

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Only Two Men to Run Easy on Men and Team -

- THE AUTO-FEDAN - Means One Less Man

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Especially Strong for Alfalfa - Feed Hopper only 39 Inches from Ground - Largest Feed Opening -

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cashire Moonies and Yorkshire Pheasants; while such a variety as the Penciled Hamburgs were either wholly unknown or else were so little thought of that they have left no record of their origin, if, indeed, they are natives of England at all." These Penciled Hamburgs were probably imported directly from Holland where they were originally known as Dutch Everyday Layers or Dutch Everlasting Layers. The average Hamburg pullet, it is said, will begin laying at four or five months of age, and will lay from 150 to 200 eggs the first year under favorable circumstances. The second and third years' hens will average from 175 to 225 eggs when properly cared for. After this productivity gradually declines, though there is one Black Hamburg hen on record that laid 220 eggs in ten months when she was five years old.

No other breed has so little of the brooding instinct.

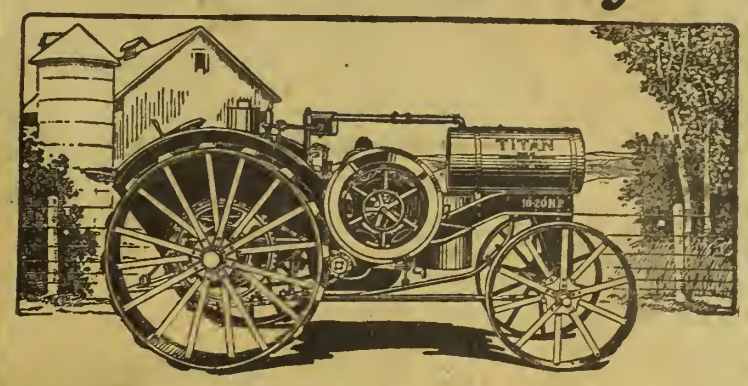
FAIR DATES

Humboldt County, Ferndale, August 21-24, Secretary W. F. Moore.
San Joaquin County, Stockton, August 22-24.
Napa County, Napa, August 22-24, Secretary, E. P. Locharrine.
California State, Sacramento, August 31-September 8, Secretary Geo. B. Keefe
Glenn County Livestock and Agricultural, Orland, September 16-21, Secretary E. A. Falk.
Kings County, Hanford, September 23-28, Secretary E. Grayatt.
Ventura County, Ventura, September 30-October 5.
Fresno County, Fresno, October 1-5, Secretary C. G. Eberhart.
Southern California, Riverside, October 8-12, Secretary R. L. Taber.
Sonoma County, Santa Rosa, October 10-12, County Farm Bureau in charge.
California Liberty, Exposition Park, Los Angeles, October 12-26, Secretary F. B. Davison.
Hemet District, Hemet, October 14-19.
California International Livestock Show, San Francisco, November 2-9, Manager Jos. E. Painter.

OTHER STATES

Spokane Interstate, Spokane, September 2-7, Secretary W. L. Tennant.
Vancouver, Vancouver, B. C., August 19-24, Secretary H. S. Rolston.
Southwest Washington, Chehalis, August 26-30, Secretary G. R. Walker.
Montana State, Helena, September 9-14, Secretary R. S. Skinner.
Washington State, Yakima, September 16-21, Secretary Frank Meredith.
Roundup, Pendleton, Oregon, September 19-21.
Colorado State, Pueblo, September 23-28, Secretary J. L. Beaman.
Gem State, Boise, Idaho, September 23-28, Secretary O. P. Hendershot.
Oregon State, Salem, September 23-28, Secretary A. H. Lea.
Utah State, Salt Lake City, September 28-October 5, Secretary Earl J. Glade.
Twin Falls, Filer, Idaho, October 1-4.
State Fair of Texas, Dallas, October 15-27, Secretary W. H. Stratton.
Northwest Livestock Show, Lewiston, Idaho, November 7-16.
Arizona State, Phoenix, November 11-16, Secretary Cecil D. Boyce.
Pacific International Livestock Exposition, N. Portland, Oregon, November 18-23, Secretary W. H. Crawford.
International Livestock Exposition, Chicago, Illinois, November 30-December 7, Secretary B. H. Heide.
National Western Stock Show, Denver, Colorado, January 18-25, 1919, Secretary Fred P. Johnson.

Tractor Safety



FOR twelve years and more, shrewd and careful American farmers have kept us busy filling their orders for **International, Mogul, and Titan Kerosene Tractors.** In those twelve years our tractors have had to meet every possible combination of field and climate conditions. The types and sizes we sell today are the ones that have successfully met every test. Any one of them is a safe tractor to buy.

One great advantage to farmers who buy our tractors is the fact that we can also supply all the implements and machines that go with the tractor. We know farm needs. Buying from us, you get a complete, well balanced outfit for field or belt work.

Another advantage is our extensive dealer and branch house organization. A telephone call to a nearby dealer brings you promptly a repair, replacement, or adjustment for any machine we sell.

Look at it any way you will, you cannot make a safer tractor investment than to buy an **International, Mogul** or **Titan** kerosene tractor. See our dealer in your town, or write us for full information about a safe tractor for your farm.

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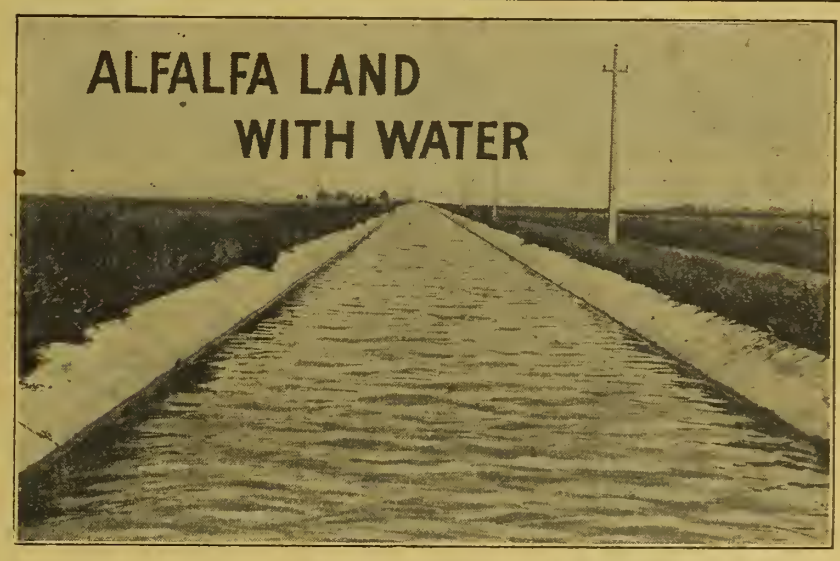

Brentwood Irrigated Farms
In Eastern Contra Costa County.
Land Planted to Alfalfa, also first class orchard land. Tracts of twenty acres and up with easy terms of payment. For Prices and Descriptive matter address
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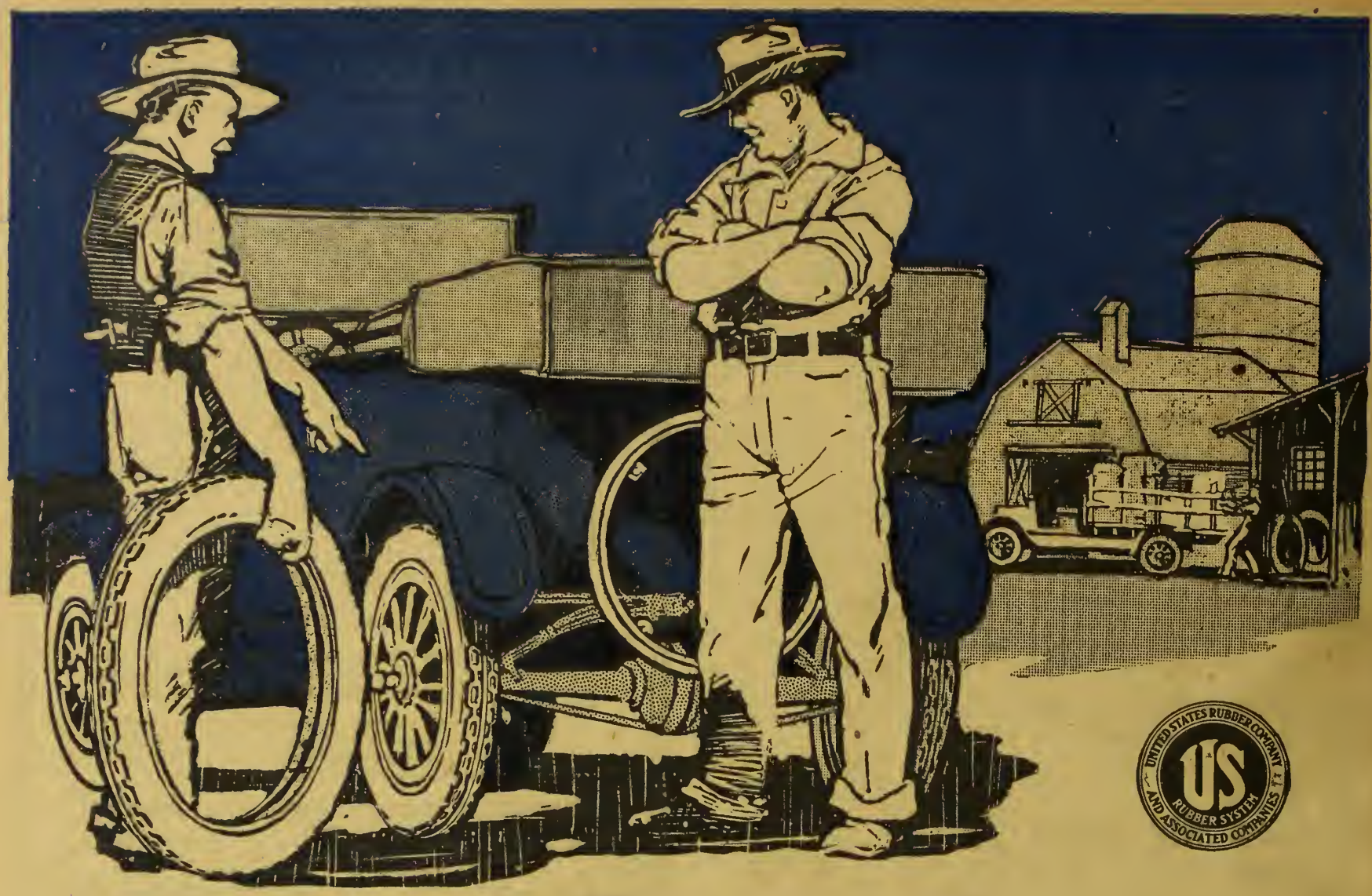
California State Fair

At Sacramento, August 31st to September 8th, inclusive

Make the War Time Fair the Biggest Ever
United States Government Food Training Camp
Show What You Have Done. Learn What Others Have Done
We Need More Soil Products—Better Livestock
Exhibit Your Best to Help Solve the Nation's Food Problem
The key notes of the 1918 California State Fair

PATRIOTISM - PROFIT - PLEASURE
Great Display of Vocational Work by School Pupils
Over 500 Prizes, divided between City and Rural Schools for Domestic Arts and Science, Manual Training and Home Gardens. Greatest incentive ever offered to California Boys and Girls.

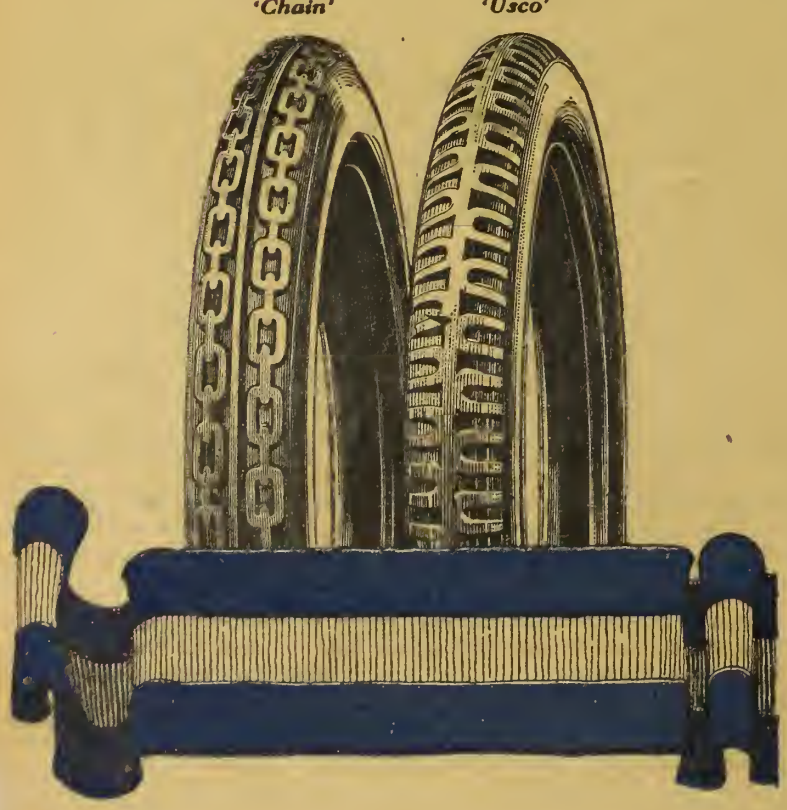
Better Baby Conference—Lectures and Demonstrations Each Day
Largest Livestock Show in the West Over $40,000 Offered in Premiums
Education and Amusement Combined
Bigger and Better Poultry Show **Special Pet Stock Show**
Displays of Horticulture, Agriculture, Viticulture, Forestry, Dairy Products, Dairy, Farm and Road Machinery, Tractors, Etc.
Daily Program of High Class Amusements—Night Horse Show—Harness and Running Races—A Tent City of Carnival Attractions.
New Agricultural and Horticulture Building
Great Annual Band Concert Open to Entire State
e Sure and Visit the State Fair and Mather Aviation Field Send For Premium List
Geo. C. Roeding, President Chas. W. Paine, Secretary
Sacramento, California.



Facts vs. Guess-work

United States Tires are Good Tires

'Chain' 'Usco'



"This car is as much a part of my farm as the barn is. It's working every day. It's a business proposition. So I'm going to make her upkeep strictly business.

"These United States Tires are a beginning. I've been investigating and gathering evidence all over the country. I'll bet I've talked to a hundred farmers who drive cars. The majority vote is United States Tires for long wear and economy. It was unanimous with the fellows who are keeping books on their cars and finding out what it costs them to ride a mile or a hundred.

"You see I'm starting on the idea that quality pays in the long run. I'm fitting the car out right to begin with. That's the way to shove down the little old-cost-per-mile at the end of the year."

Any sound investigation of tire costs among experienced motorists will lead you to United States Tires as business-economy equipment.

There are treads and types for every purpose—all United States quality.

Any United States Sales and Service Depot dealer will cheerfully aid you in selecting the right tire for your car and your roads.

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — August 31, 1918 — No. 9

It Will Soon be Time to Plant Cover Crops

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914.
Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916.

Published By
THE CULTIVATOR PUBLISHING CO., Inc.

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Frank H. Thomas, Pres. and Manager.
R. M. Teague, Vice-President.

C. B. Messenger, Editor.

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J. A. Koethen — J. B. Neff
J. W. Mills — Louis B. Stanton
Dr. Wm. Petrie

Live Stock: W. S. Guilford, C. L. Hughes, C. A. Briggs.

Subscription Price.....$1.00 per Year

Copy for change of advertisements must be in the office on Saturday preceding date of issue. New advertising copy must reach the office not later than Tuesday to insure insertion.

Advertising rates furnished on application.

The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

Member

Eastern Offices:
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S. E. Leith, Fifth Avenue Building, New York
C. A. Cour, Globe Bldg., St. Louis, Mo.

Entered at the Post Office at Los Angeles, California, as Second-Class Matter.

Saturday, Aug. 31, 1918

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

Whether soil analysis and the addition of chemicals to a soil makes it richer may be a moot question; there is no question in the mind of any grower as to the necessity for humus or proper mechanical condition of the soil before it will give profit to the grower. Remove the vegetable matter, and a soil of putty like consistency remains, or, possibly, a collection of particles of sand. But the keeping up or bettering of this mechanical condition of soils is becoming one of the most serious problems for the orchardist. The farmer may rotate his crops and secure better results or at least stand off the inevitable day of reckoning. The orchardist buys manure, so far as he can, or he plows under straw or even long-priced alfalfa hay. This at best is expensive, and in order to escape some of the expense, green manure crops are employed. Our illustration on the cover of this issue shows a most successful crop of this kind. Mr. Hodgson treats the question more at length on the opposite page.

FOURTH LIBERTY LOAN

Secretary McAdoo writes: "It is absolutely essential that this loan be a great deal larger than previous ones and I am confident that with the wonderful spirit shown me in my trip to the Pacific Coast, it will be oversubscribed as enthusiastically as the previous drives."

The secretary has not announced size of loan, perhaps six billions, with another this winter. Every farmer will do his share September 28-October 19.

SPEAK NOW

Prof. Woll writes: "There should be no difficulty about having a feed inspection law placed on our statute books at the next session of the legislature if the farmers of the state make their wishes known."

We think Prof. Woll is exactly right in his conclusion, but it sometimes takes a whole lot of insistence to induce a legislator to listen to a farmer's wish. It's a case of prayer without ceasing; and it's none too soon for the farmer to express his wish as to the feed situation. We imagine the coming state fair week will hring live stock people and others together in a way which will give opportunity to express a wish as to legislation needed.

WHO'S TO BLAME?

The U. S. food administration is probing the recent Turlock slump in cantaloupes. So far as can be learned the growers have suffered a loss around $50,000 and the consumers have had no material advantage because of the low prices. It is rumored that "somebody is to blame." Whether it was merely an accident or the result of profiteering plans of some large handlers is what the government is asking. Parties responsible for supplying cars to the shippers admit there was a slight shortage of iced cars on August 2 when prices dropped to 50 cents a crate. Investigation has shown that during the slump over 100 cars were shipped out. Some landed in New York at $875 total cost, bringing on that market $1750.

MORE WOOL

Stanislaus County farmers have appointed a committee to cooperate with experts of the U. S. department of agriculture who are calling attention to the possibilities or greater profits from wool growing. It has been estimated that Stanislaus County can produce five times the present number of sheep and with profit to everyone that engages in the industry intelligently.

We believe that many a California farm will be enriched and made more profitable by the installation of a few sheep. At least give them a chance along the ditch banks where they will not only turn weeds into wool but reduce the amount of bank cleaning often necessary.

POULTRY PRODUCERS

Regarding the attack on the Poultry Producers Association, to which the Cultivator referred in the last issue, we are informed by a member of the association "that the petition referred to came from a very few disgruntled members, some of whom have never given the organization their hearty support."

It appears in this case that the petition filed before a food commission which had no control over the exist ence of the organization was probprobably only for the purpose of em harrassing the management." The Poultry Producers of Southern California, Inc. is a purely cooperative organization endeavoring to secure just return to the producers, and the Cultivator would in every way encourage such an organization. This institution is making good, for it has the type of people who will make it successful.

PEACH PEELING "PATENT"

Here's a piece of news clipped from a Monday daily which has great interest for fruit growers of California:

"The famous 'Dunkley Patent' suit, involving millions of dollars in yearly revenues and affecting the entire canning industry of the United States, was decided recently by Federal Judge Oscar A. Trippet in favor of the Pasadena Canning Company and George E. Grier, defendants. The court instructed attorneys for the Pasadena Canning Company to prepare its own decree in the patent infringement suit.

"The Simon J. Bunkley Company of Kalamazoo, Michigan, which was mentioned as being controlled by Swift & Company, claimed the sole right to use the patent peach-peeling machine which suddenly revolutionized the canning business. The Pasadena Canning Company also was using such a machine, and claimed that George E. Grier of Pasadena had invented the first peach-peeling machine successfully used in the business."

The trial lasted six weeks, and involving millions as it did and those millions coming from the fruit growers of the country, we extend congratulations to those who have put money and time into the fight.

Kemper B. Campbell and F. J. Heney conducted the case for Californians while some of the most prominent attorneys of the East acted for the Michigan claimants. More than 60 witnesses were brought from Michigan.

THE FOURTH LIBERTY LOAN

No matter what amount it is, we, the general patriotic Americans, only know that SIX OR EIGHT BILLION DOLLARS is needed and that we will raise it.

Germany's people, faltering at home as their soldiers are faltering beneath Foch's blows in the field, only raised enough in their last loan, we are told, to pay interest on previous war levies. Turkey's last feeble effort before she quit the Central Powers, was to raise twelve MILLION dollars of a proposed $32,000,000 loan.

Real sacrifice of many comforts will be the means by which many American families swell their purchase of Fourth Liberty Loan bonds. Those whose service flags bear a star of gold will not be inclined to sympathize deeply with those who complain at slight economies in the interest of war funds.

Those who stay at home can make no sacrifice comparable with that which those who go on board ship for overseas duty may be called upon to make at any moment.

This Week's War Notes

A nation wide investigation into costs of living has been begun by the department of labor.

A dispatch from Vienna states that Austrian troops in Alhania have recaptured Berat and Fieri.

The post office department has approved increase of wages for employees of the Western Union Telegraph Company.

Spain's latest protest against sinking of her vessels by German submarines has been met by the statement that "Germany can make no concessions with regard to her warfare."

British air men have successfully bombed the railway stations at Luxembourg and Bettembourg, and the city of Cologne. Also from Amsterdam comes the report that Constantinople has been bombed.

The sector occupied by American troops in Eastern France from Verdun to the Swiss border, has been very quiet. It is stated that our troops at their most advanced point are not more than 20 miles from the Rhine.

The new man power bill enlarging draft age to from 18-45 was passed by the House on Friday, by the Senate on Tuesday. Complete plans have been made for registering the new men at an early date in Septemher, presumahly Saturday, September 7.

General Pershing has issued warning against appeals being circulated in the United States for funds for "Thousands of blinded American soldiers heing brought into Paris." Up to August only two blinded American soldiers had reached Paris, General Pershing reported.

The Allied forces in Siberia are in charge of General Otani of the Japanese army. The forces of the different countries will remain separate units so far as matters of administration and supply are concerned but are subject to orders from General Otani as to military operations.

The state council of defense of California has issued orders to all county divisions to place armed guards around all warehouses, docks, factories, and all public buildings where foodstuffs are stored. In addition it is directed that all such buildings be hrightly lighted and that adequate fire fighting provisions be made.

Nogales, Arizona, was the scene of a hattle between American troops and Mexicans on last Tuesday. Two Americans were killed, 29 wounded, and estimates of Mexicans killed and wounded ran up to as high as 100. Five hundred American troops were ultimately in the battle which was along International Avenue, or the boundary line which runs through the town. The fight was started by a Mexican shooting an American sentry when he prevented a Mexican customs officer from smuggling across the line a fellow countryman.

The senate military subcommittee has reported its aircraft investigations. It comments favorahly upon reorganization already perfected while charging to the old organization waste of millions of dollars, improper location of training fields, employment of inexperienced inspectors, and favoritism to contractors. Questions of individual dishonesty were left to the investigation of the department of justice inquiry directed by Charles E. Hughes. The committee also recommended one-man control through the creation of a new department of aviation headed by a cabinet officer.

In response to the Bolshevik declaration of war on the United States our vice-consul at Petrograd has turned over the affairs of our government to the Norwegian minister. Lenine and Trotzy have declared the British, French, and American troops which landed at Archangel, brigands, and have called upon the Russian people to fight them as enemies of Russia. Nicholas Tschaikovsky, president of the provincial government at Archangel, has announced that he will soon issue an order mobilizing a new national army. He also declares: "America's policy exactly meets our wishes. We want to bring about a new Russian front and reorganize the country ourselves. We want the Allies to form a stream of troops behind which we can work out our own salvation."

The story of the past week on the Western Front is one of steady advance by our forces. The British have pushed back the Germans north and south of Bapaume and heavy artillery fire on that city has practically destroyed it as a German base. It is reported that the town is practically vacated and that the resistance being put up by the Germans is simply to hold hack the British until their retreat is safeguarded. Street fighting between British and German troops is also reported on the outskirts of the town. Farther south the French have taken Fresnoy an important outpost of Roye. Violent counter attacks by the Germans north of Soissons have been repulsed by the French. As the battle line stands today from Albert to Soissons it is practically a straight line. Latest dispatches indicate Roye is now occupied by the French. The British and French armies are practically surrounding Peronne.

This Winter's Cover Crops Especially Important

Written for California Cultivator By Robert W. Hodgson

THE state food administration has recently ruled that no substance such as bean straw or alfalfa hay, possessing considerable value for the feeding of stock, shall be used as a fertilizer or mulch in orchards during the period of the war. The present supply of manure is far below the demand, necessitating keen competition among buyers in order to purchase even small amounts. Ready mixed commercial fertilizers are very expensive and their use has not been found wholly satisfactory. Nitrate of soda,

Tulare County Orchard
Mixture of vetch and wild oats which gives heavy growth of humus former.

which the government has been making arrangements to purchase in wholesale lots and to deliver at cost to farmers, is not to be recommended as a fertilizer for citrus orchards. Sulfate of ammonia has advanced nearly 100 per cent in price and is now practically off the market. The situation facing the citrus grower at present virtually is, that if he intends to fertilize at all, he is under the necessity of raising his own fertilizer or, in other words, he must have recourse to a green manure crop. Many citrus growers have felt for sometime that this is the cheapest method of fertilizing, but now there seems to be no alternative.

The last eight or ten years have seen the development and rapid spread of the practice of using winter cover crops in our citrus orchards. At one time or another a large number of different crops have been tried, but in the competition sour or bitter clover, Melilotus indica, has gradually shown its superiority until at the present time it constitutes the most important green manure crop grown in Southern California. Second in importance comes common vetch, Vicia Sativa, closely followed by Canada peas, both of which, however, have servious drawbacks preventing their more extensive use in that they are readily attacked by aphis. Vetch also serves as a host plant for the cottony mold fungus. For these reasons the use of vetch and Canada peas as green manure crops have been decreasing year by year, although on certain of the more open and porous soils, growers have felt that they constitute the only satisfactory winter cover crops on account of the great difficulty in obtaining a stand with the smaller seeded melilotus.

How Valuable are Green Manure Crops?

Although most citrus growers will readily admit that the addition of organic matter and nitrogen to the soil, such as is accomplished through the use of a green manure crop, is probably a desirable thing, especially if the cover crop be handled properly, oftentimes the question is brought up of just how great is the value received from their use. To answer this question among others, ten years ago the citrus experiment station began a series of experiments on the use of cover crops, the results of which are summarized in Bulletin 292 of the agricultural experiment station, by W. M. Mertz, issued recently. This bulletin constitutes one of the most valuable ever put out from the citrus experiment station and every orchardist should have a copy, which may be obtained by writing to University of California Agricultural Experiment Station, Berkeley, or Citrus Experiment Station, Riverside.

In this bulletin Mr. Mertz who until recently was a member of the citrus experiment station staff and who had charge of the cover crop experiments for a number of years, shows by actual measurements that at the end of ten years there is a vast difference in the yield and quality of fruit on trees in the green manure plots and those where winter cover crops were not grown, although given the same care in other respects. Moreover, there is a marked difference in size of tree and in general health in favor of the legume green manure plots. In fact, the trees on the plots where legume green manures have been annually turned under are superior in every way to those similarly fertilized where no leguminous green manure has been used. Green manuring has resulted in a total yield at the age of ten years of 68 per cent more fruit. In addition there has been 63 per cent more of the desirable sizes than on plots not green manured, showing a big difference in size of the fruit. The trees on the green manure plots averaged 30 per cent larger and the legume green manure plots showed the most thrifty condition of all as evidenced by only three per cent "mottled" leaves during the 1912, 1913 and 1914 seasons as against 13.5 per cent for the trees on plots where legume green manures had not been used.

A series of plots using legume green manures as checked against plots using cereal winter cover crops and in addition given varying amounts of heavy nitrogen containing fertilizers, upon which various indicator crops were grown, showed that the use of an average green manure crop of Melilotus indica is equivalent to the application of between 500 and 600 pounds of nitrate of soda per acre. At present prices this would be adding nitrogen to the value of $30 to $40 per acre. The average increase in yields of the indicator crops following the use of legume green manures is as follows: potatoes, 39 per cent; corn, 45 per cent; cabbage, 44 per cent; sugar beets, 43 per cent; sorghum, 25 per cent, and Sudan grass, 18 per cent.

Value Aside from Addition of Nitrogen

The $30 or $40 worth of nitrogen added to the soil, however, does not represent the total value of the incorporation of legume green manures in the soil. Of very considerable importance is the addition of the organic matter, entirely aside from its high nitrogen content. The necessity of adding organic matter to our soils to replenish that lost through oxidation and other agencies has been urged for years. The text frequently used at Farmers' Institutes and Fruit Growers' conventions by Prof. G. W. Shaw used to be "With all your getting, get humus". It would have been more nearly correct had he stated "get organic matter" for we are beginning to believe that it is the active organic matter which is of the greatest value to our soils. Not only does this active organic matter add to our humus content and thus improve the physical condition of the soil but it acts as a source of food for the bacteria and provides optimum conditions for their activity. In addition it plays the very important part of setting free locked up phosphorus and potassium through its decomposition.

Cover crops have other advantages such as the prevention of erosion on hillside land, perforation of plowsoles, and absorption of soluble nitrogen, preventing its loss through leaching by winter rains.

How to Handle the Winter Cover Crop

It is of the utmost importance that a good stand be obtained in order to get full value from a green manure crop. With our great variation in soils it is to be expected that methods used in one section will not necessarily prove satisfactory in others. Indeed, it is in the question of how to handle the soil so as to obtain a good stand that the citrus orchardist is at present most interested. In certain sections the opinion is freely expressed that a winter crop is not possible on account of the difficulty in getting a stand. Melilotus has shown a wider adaptation than any of our other cover crops, and it is the writer's belief that it can be grown practically everywhere if only growers will experiment and try various methods of seeding and irrigating until the right method is found.

In the rocky, porous soils from Glendora east through Claremont many growers have complained that it is practically impossible to get a stand with Melilotus although vetch will do fairly well. The difficulty is that the soil takes water so readily and lateral seepage is so slight that it is difficult to irrigate a small seeded crop like Melilotus. The usual method of broadcasting the seed, followed by a light harrowing, does not result in a satisfactory stand except right in the furrows where the water wets the surface soil. The writer has talked with several growers in this section who have made a success in getting a stand, and they all seem to agree that the seed should be planted deeply, down where it gets to the moisture. This can be accomplished by cultivating it in deeply or by drilling. A number of suggestions of value have been made by growers for seeding soils of this open porous character. One is to furrow out and irrigate. followed by broadcasting the seed in the irrigation furrows and on either side as far as the water has "subbed". Then, later, furrows are run between the original ones, and the process repeated. In this way a fair stand may be obtained even on rocky soils. Another suggestion is in the use of a portable sprinkler system, using a small centrifugal pump to be installed on a water box, developing enough pressure to force the desired amount of water through a system of pipes or hose provided with sprinkler nozzles at suitable intervals. This suggestion if worked out would add another member to our list of specialized citrus operators, the cover crop irrigator.

The method which has given the best success with Melilotus over a wide variety of soil conditions has been to broadcast one-half the seed on the dry soil mulch before furrowing. The soil is then dragged lightly with

Continued on Page 207

WINTER COVER CROP

Here is an illustration used in a former Cultivator. The above photo, taken by J. R. Garthwaite in the foothills not far from San Gabriel River, is a good "horrible example" of an orchard in which there was no cover crop. The soil had been kept thoroughly cultivated and when the flood of 1914 struck the orchard every particle of surface soil was washed away and in its place a mass of boulders and gravel was deposited. The surface of other orchards nearby in which heavy crops of rye or other soil binders were planted were preserved almost intact. This is ordinarily a secondary consideration of cover crops, though in this particular case a most vital one.

Agricultural News Notes of the Pacific Coast

Northern California

Prizes for Shorthorns at the state fair total over $2000.

Gridley, Butte County, will have a new dried milk factory.

Canneries of Sutter County have closed on Tuscan clings.

The big sugar factory at Manteca began its initial run August 12.

Placer County peach growers report offers of $80 per ton for clings.

A number of pig clubs have already been organized in Shasta County.

Tilly Alcartra, famous Yolo County cow, is being featured in movie films.

Farmer's short courses at Davis farm school September 3 to November 8.

Hop growers are calling tobacco men to their aid in their fight against prohibition.

Shipments of live stock from California during the month of June total 4473 carloads.

State Forester Homans has been conducting meetings of fire fighters in Amador County.

Butte County has secured a farm adviser. D. N. Sweet has been appointed to the position.

Women and girls over 14 are paid $2.50 per day for picking fruit in El Dorado County orchards.

There is a large increase in number of sheep and cattle grazing this year in the Trinity national forest.

A yield of a bale to the acre is expected on a 1500 acre tract planted to cotton near Chico, Butte County.

Farm Adviser Baade of Napa County reports many complaints of cracking of prunes and dropping from trees.

At a recent meeting in Chico of prune and apricot growers it was declared that there was no shortage of labor.

Alfalfa growers of Clarksburg, Yolo County, have organized a branch of the California Alfalfa Growers' Association.

The government is paying $7.50 per ton for peach pits delivered at packing houses of the California Peach Company.

Farm Adviser Merrill will have an assistant who is an expert in poultry raising. E. J. Hauser has been appointed to do this work.

The first stock sale of the Nevada County farm bureau was held on a ranch near Grass Valley on August 15. A number of beef cattle were disposed of.

The Napa County fair has been postponed to October 10-12 because of construction work on the state highway leading in from the Sacramento Valley.

Under the direction of the food administration at San Francisco, all the fishing organizations of the bay region have been pooled into one organization.

Cool weather of the past month has been very favorable to growth in bean fields of Sutter County, and excepting in fields on high ground where no irrigation can be secured plants are looking well.

Directors of the Humboldt County fair are actively at work planning many exhibits for the fair to be held at Ferndale, August 21-24. Effort will be made to have an especially good display of live stock.

Central California

Beans are showing up well in San Luis Obispo County.

Ripon is shipping six to eight cars daily of melons and tomatoes.

Many farmers in Monterey County have this year irrigated barley and wheat crops.

Observance of August 31 as National Egg Day is being urged by California poultrymen.

The apple crop in the Salinas Valley of Monterey County is reported as only half that of last year.

Visalia prune growers expect heavy tonnage of prunes. They met last Thursday to fix schedule of prices.

Shortage of milkers has forced many dairy men of Monterey County to go into the bean raising business.

Monterey, Monterey County, will ship about 15 carloads of apples, 25 per cent under last year's shipments.

Free transportation of exhibits to and from the state fair will be allowed by the railroads as in former years.

It is reported that the California Raisin Company has sold all of this year's output of layer and cluster raisins.

Apple shippers in Watsonville expect the Pajaro Valley to put out about 85 per cent of its normal crop of Newtowns.

Barley growers of Madera County are trying to get together on some sort of a plan to market their crops at reasonable price.

Turlock cantaloupe growers are endeavoring to prevent some of the overanxious ones marketing green melons to the detriment of everybody's returns.

The Salinas Valley of Monterey County shows bean fields in excellent condition due to the cool foggy weather which has made up for deficient rainfall.

Peach pits are being saved for government use by all canneries; the Red Cross is forwarding small amounts saved by home canners. The government price is $7.50 per ton.

Horticultural Commissioner Howard of Kings County reports a serious outbreak of the sphinx moth in the Delta View section; it has completely defoliated a vineyard of 18 acres.

Farmers of Stanislaus County have pooled and sold to the government 30,000 pounds of wool. The farm bureau is also signing up farmers who will place a few sheep on their ranches.

Managers of the Tulare County Live Stock Association have decided to go ahead with their plans for building a sales pavilion. The first auction sale will be held there November 21. It will be of registered Holsteins.

There will be local center meetings of the Santa Cruz County farm bureau at Upton August 16; Happy Valley, 23; Santa Cruz, 26, Soquel, 28. All these meetings will be held at 8:30 p. m. There will also be a directors' meeting August 3 at 10:00 a. m.

The food administration is investigating the disastrous slump in the Turlock cantaloupe market. It is charged that during the glut caused by a break in the market buyers in the field cleaned up $50,000. Melons during the slump were put down in New York for $875 a car and brought $1750.

Southern California

A date festival will be held at Indio some time during October.

Imperial Valley estimates its coming cotton crop at $15,000,000.

Some 15 or 20 farmers in the Victor Valley are growing broom corn.

All of the beet sugar factories in Orange County are now slicing.

The California Packing Co. at Santa Ana is now working on pimientos and chiles.

The pest of worms is disappearing from the bean fields of Ventura County.

The first shipment of dates from the Coachella Valley was sent out on July 29.

The honey yield of Ventura County is estimated by County Bee Inspector Cale at 2,000,000 pounds.

The new packing house of the Yucaipa Apple Growers Association is now ready for operation.

Riverside County has decided to make an exhibit at the Liberty Fair at Los Angeles in October.

Former Farm Adviser Sullivan of Imperial County has entered the navy. His successor will soon be appointed.

Ventura County had over a quarter of an inch of rain on August 15. This was the second rainstorm of the summer.

A slight rainfall in the Palo Verde Valley was of benefit to cotton growers, but caused washout on the railroad.

A federal entomologist is stationed in Imperial Valley to give aid in combating insect pests. His office is in El Centro.

The apple crop of the Chino valley is now being harvested. The Chino Apple Growers Association is packing at the Narod house.

County Horticultural Commissioner Brock of Ventura in his last monthly report places the value of Ventura County's crops for the current year at $18,482,300.

Suit against an orange grower of Santa Ana has been brought by the Placentia Mutual Orange Association. It is claimed that he sold 900 boxes of oranges outside the association.

All retail grocers are now compelled by a mandatory order of the United States Food Administration to take the name, address and the number in the family, for every two-pound purchase of sugar.

Imperial Valley ranchers have complained to the federal employment bureau that Los Angeles and Arizona are attempting to recruit laborers in their section although the shortage of labor is already acute.

A volunteer fire fighting force has been formed by 22 Chino ranchers to protect hay from fires. The county has provided the fire fighters with an automobile trailer and supply of fire fighting apparatus. R. A. Condee of George Jr. Republic School is fire chief.

The Bean Threshers' Association of Ventura County has fixed 40 cents per hundred as the minimum charge for threshing and agreed on the following rates of pay per day for labor: Sack sewers, $4; sack fillers, $4.50; hoedowners, $4.50; feeders, $5; pitchers, men, $3 each; two men, $4.50 each; derrick drivers, $3; oilers, $4; firehelper, $10.

The Coast and General

Washington began shipping out Elberta peaches August 15.

Washington will hold its state fair at Yakima September 16 to 21.

Alfalfa in the Kittitas Valley of Washington is bringing to growers $25 to $28.

Arizona will send this month 300 men to training camp at Little Rock Arkansas.

Lane County, Oregon, is making preparation for its anual corn show at Eugene.

Grape growers of Mason County, Washington, have formed a marketing association.

The cranberry yield of the Columbia River Valley is estimated this year at 10,000 barrels.

Beet army worm is reported to be making serious inroads in Colorado sugar beet fields.

New York has a fine crop of apples in sight; Virginia crop will be 30 per cent under that of 1917.

Nearly 100.000 farmers attended the big tractor demonstration at Salina, Kansas, the first of August.

Cantaloupe shipments from the Rocky Ford district of Colorado will be about the same as last year's.

Utah has been asked by the food administration to increase her production of wheat this year a million bushels.

Farmers of Lincoln County, Washington, have just erected at Gradelles a grain elevator with capacity of 46,000 bushels.

The Island County (Washington) Gucrnsey Breeders' Association has sent J. M. Pratt of Oak Harbor to Wisconsin to select a carload of pure bred Guernsey heifers for the members of the association.

Women teamsters have made their appearance in Vancouver, Washington. A coal company and an oil company have recently employed women to drive their teams and report their work satisfactory.

Five states in the union have more automobiles registered than there are in all England, but England is using more motor trucks in proportion to the total number of motor vehicles than we are in America.

A brilliant airplane flare has been perfected for use of American aviators. The flare is of 400,000 candle power and hangs from a parachute beneath the plane where it may be released at will of the pilot.

Arizona has a live stock squad of federal and state specialists touring stock districts to give instruction in the handling of range diseases. They have with them a full collection of specimens of poisonous range plants.

The government is arranging to establish in all colleges units of the Students Army Training Corps. Under this arrangement the young men will continue their regular courses of instruction until called for military service.

The women members of the Medina, Ohio, Grange have resolved that "the matrons of said grange refuse to prepare bread, cake, pickles, meatsauce, chow chow and other kinds of chow for the consumption of patrons of the grange during the months from June to October, inclusive, unless such food can be served at a time to take the place of a regular meal."

Making Poultry Pay

By M. E. Bemis

THE relative cost of poultry feed and the selling price of eggs has served to reduce the flocks of poultry on the farms throughout the entire country. In the Salt River Valley a number of the egg farms have reduced their flocks, some practically going out of the business altogether.

As a general rule I have observed that when you see the great majority of farmers getting out of, or into, any particular field of crop raising or live stock raising, it is a pretty fair indication that the majority have found that which is, or is not, profitable. It is true that farmers as a class are not good business men; they don't have elaborate cost systems; many of them don't keep any sort of books, but mighty few hut know whether they are in danger of being sold out by the sheriff, or are able to buy automobiles and pianos.

Now I believe that the poultry business can be made just as profitable now with present feed prices and present egg prices as it has ever been. That it isn't on most farms is due primarily to the fact that we are doing big things in a big way and have little time to give to problems that are intricate.

The American people have adjusted themselves to the changes made necessary by the war with a spirit and speed unbelievable to one who has not lived through and been a part of this transition. The American farmer has gone even farther than most Americans, because he, like them, has sent his sons to France; he has bought Liberty bonds and tightened his belt to conform to the restricted rations. All these the average American has done, but the farmer has done more. He is using tractors to replace man power and horse flesh and horse grain; he has taken his wife and daughters into the fields and orchards; he is utilizing labor that he would not have once considered worth the butter on their bread. The result is that seeing with a broad vision he has reaped on a big scale. We are no longer worrying as much about winning the war with food—we know now that the food question is going to be taken care of—to this extent anyway that we will have enough of wheat with the help of corn and other grains so that we are not going to starve. We are not quite so sure about some of the other staples such as eggs which are necessities, but as it were secondary necessities.

The farmers haven't had the time to give to poultry, and poultry needs a lot of attention that requires time, and in the methods of handling poultry there has come with other changing conditions a still more marked change. Not only is feed of all kinds high, but we cannot feed wheat at all now, and wheat has been the staple poultry feed of the Southwest. Many poultrymen with whom I have talked say they cannot make their hens lay as well with any other ration as they could with wheat. No doubt this is true; it is one of those things that need adjustment, and it takes time and thought to work out the adjustment. It is a matter of finance to substitute a tractor for two men and and four horses, but results are big and warrant the step, and the world needs the grain, the hay and the cotton. To a lesser degree the world needs eggs, and milk, fruit and vegetables, and hy and by we are going to get used to the big changes and get around in the good American way to pick up the loose ends and make the necessary changes that will enahle us to make the little things produce and pay too.

To those who are ahout ready to make the necessary adjustments that will put the poultry flock on a paying basis, the account of this little flock which I will give will he not only interesting hut profitahle.

The hero of this story is Roy Bixby, a young man who was born and raised on a Kansas farm. I don't know where he acquired his love for poultry, and it doesn't especially matter. He got his poultry experience on several California poultry ranches. His father came down to the Salt River Valley and settled and later Roy drifted over here, married and got a job in a bank, hut never for a moment has he abandoned his dreams of a paying poultry ranch. I dislike to spoil this story at the beginning by telling you that it has no ending for the reason that Bixby has gone back to California, still as a hank clerk, but with the same dreams of a profitable poultry farm and richer by the data which he has given me and incidentally several dollars of real money.

A 281-Egg Hen

In May, 1917, he bought 300 day old chicks of one of the breeders on the coast who makes a specialty of breeding egg producers. Thirty of these were lost when they were a week or two old through the negligence of a neighbor irrigator. The loss other than this was very small. Cockerels were culled out as soon as they would do to sell for broilers or fryers and as the pullets matured those that did not show vigor were culled out. He worked out a balanced ration that enabled him to keep the chicks growing rapidly and at the same time was economical. Some pullets hegan to lay in Octoher; in November his flock produced eggs enough to pay for the feed less three dollars; in December the flock paid a profit, and so, starting with that month which he called the first laying month, the record follows. Culling had heen continuous; whenever he found one that was apparently not laying it was culled out. This accounts for a difference in numbers in succeeding months, where the record for the month shows no loss from death. Bixby has studied the Hogan system pretty thoroughly and has made some ohservations of his own in the matter of selection for egg production. To this factor of rigid culling is due in no small degree his success.

Beginning December 1 he had 80 pullets which had cost him 90 cents each. In December they laid 1196 eggs, a daily average of 38.58. The eggs brought $50.32. They ate 6 1-3 pounds feed costing 18 2-3 cents each. Two-fifths of the ration was fed as mash, and the halance whole grain, consisting of half milo and half barley soaked until the sprouts were just starting, about one-eighth inch long. The mash was bran, ground milo and beef scrap. The nutritive ratio was 1:46. The average weight of the eggs was 22½ ounces a dozen. The December profit was $35.33, or a little more than 44 cents each.

The January record was: Average number of layers, 79; loss of stock by death, none; total egg production, 1539; daily average, 49.64; percentage laying per month, 63; average number of eggs per hen, 19½; eggs averaged about 48½ cents a dozen and hrought $60.95. The feed, shell and grit cost $16.10, leaving a profit of $44.85 or 56¾ cents each. The cost of feed for January was 20 1-3 cents each. They consumed 6¾ pounds each as follows: 155 pounds of harley, 133 pounds of milo and 288 pounds of mash in the following proportions: bran 50 pounds, shorts 10 pounds, meat scrap 20 pounds and ground milo 20 pounds.

For February the average number was 78; loss by death, none; total egg production, 1445; daily average, 51.60; percentage of layers for the month, 66. The eggs hrought $53.65 and the feed cost $15.60. The profit for each hen was 48 4-5 cents, average number laid by each 18½ and the average weight of the eggs 23½ ounces a dozen. They ate 6 3-5 pounds each and it cost 20 cents each. The ration was the same as for January and they consumed 261 pounds of mash, 135 pounds of barley and 120 pounds of milo.

For the three months the average feed cost per dozen of eggs was 13 1-5 cents.

For March the average number of layers was 78; no loss; total egg production 1767; daily average 57; the average for each layer was 22.65, percentage laying for the month 73; average weight of eggs 24 ounces to the dozen. Two were broody during the month. The receipts were $50.05 and the feed cost $16.15, leaving a profit of $33.90 and an average net profit for each hen, 43½ cents. The cost to produce a dozen eggs was 11 cents. They ate 140 pounds of barley and 128 pounds of milo and 266 pounds of mash composed of 50 pounds of hran, 10 pounds of shorts, 20 pounds of ground milo and 20 pounds of beef scrap. The mash for the last week in the month was the same except that milo bran replaced the ground milo. The amount for each was 6 4-5 pounds mash and whole grain and the cost 20 4-5 cents for each hen.

The April record is as follows: Average number of layers, 77; loss, one; total egg production, 1660; daily average, 53 1-3; percentage laying for the month, 72; number going broody, 6; eggs sold, $49.10; feed cost, $15.45, profit, $33.65, profit for each layer, 43¾ cents; average number for each hen, 21½; cost to produce one dozen, 11 1-3 cents. The mash was composed of 50 pounds of bran, 30 pounds of milo bran, 20 pounds of meat scrap. The cost of this mash was $3.31 per hundred and they consumed 220 pounds. They also ate 150 pounds of harley (soaked), dry cost $2.60 per hundred, 128 pounds of milo at $2.90 per hundred. The feed cost each was 20 cents and they ate 6½ pounds each.

For May the number was the same, 77; the total egg production, 1618, daily average 52.19; average number laid by each hen, 21; numher going broody, 5; gross receipts, $44.75; cost of feed, $14.90; net profit, $29.85; average net profit for each hen, 38 4-5; cost to produce one dozen eggs, 11 cents. The mash was the same as for April and they consumed 222 pounds. They also were fed 10 pounds of rolled barley, 104 pounds of whole barley and 141 pounds of whole milo. The amount consumed by each hen was 6¼ pounds at a cost of 19 2-5 cents each.

Now to summarize for the six months: The average number of pounds of feed eaten by each hen was 38¾; the total cost per hen was $1.19 1-5; average number of eggs laid by each, 118 and the net profit per hen for the six months, $2.76.

I wish it were possihle to complete the year's record, but as I have said before Bixby has heeded a call to a hetter joh, and what is Arizona's loss will be California's gain.

These records which are ahsolutely authentic serve to show conclusively that when we get around to give poultry the attention which [illegible] we can make it as profitable as it ever was. There is no magic in Bixby's record. In the first place he got good stock from well known egg producing flocks. He fed so as to keep them growing and make them mature early, then he culled and culled thoroughly, again and again. When they began to lay he fed a balanced ration that was palatable, at the same time using as cheap feeds as were on the market.

Of course over it all was the watchful eye of a real poultryman who was always on the lookout for anything that would interfere with steady egg production.

Poultry will pay in these times of high priced feeds if one can or is willing to give to it the same attention that is given to other lines, remembering that conditions have changed and must be met with changes in methods.

The Big Third Annual Tractor Demonstration

Begins September 17

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"I want to repeat, Carco used 125 to 1 CERTAINLY DOES THE WORK, especially in regard to the SCALE and other common insect pests. I had COMPLETE SUCCESS with CARCO in cleaning up scale on infested orange seedlings."

The original letter is on file at our office, and name and details will be furnished on request.

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The Anchorage Farm
Orland California

Lindsay-Strathmore Irrigation Project

Written for California Cultivator By Martha L. Baker

COSTING nearly one and a half million dollars, the Lindsay-Strathmore irrigation district's new water system located in central Tulare County has been completed. Water is now in use from this, one of the largest and most unique irrigation systems in the state of California. It is similar in nature, though considerably larger than the Terra Bella irrigation district located in southern Tulare County.

This irrigation district comprises approximately 15,500 acres. It includes a strip of land, irregular in shape, lying at the base of the Sierra Nevada foothills and about eight miles long and five miles wide, ranging in elevation from 384 to 710 feet. In it is included the city of Lindsay, one of the most progressive small towns of the central part of the state and the shipping point for the largest amount and some of the finest oranges produced in the state. The township of Strathmore lies in the district boundaries also.

The district was organized October 25, 1915, by resolution of the Tulare County board of supervisors, under the amended Wright irrigation act of 1897. The bonds for the district, amounting to $1,400,000, were validated in February, 1917, by the irrigation district bond commission.

The water for the irrigation system is supplied from 37 wells located in the delta of the Kaweah River about six miles north of Lindsay. The water is collected in large redwood and concrete pipes and brought to the district lands in a cement lined ditch. It is distributed through a concrete flume and a second concrete-lined ditch and thence through steel pipe lines to all parts of the district. A total length of 16.57 miles of redwood pipe line is used in collecting the water. The length of the main concrete lined canal is six miles. The length of steel pressure pipe in use in distributing the water is 98.98 miles.

Twenty-nine of the wells are equipped for service this season. All the pumps are of the latest design and are operated by electricity. A total of 1480 horsepower is installed at the wells already equipped. There are two distributing zones served by two boosting plants where a total of 2150 horsepower is installed.

Low Level Canal Which Empties Into Forebay at Main Station

The water is delivered through meters under pressure to all points of the district. The distribution plan is to serve each individual property owner, of whom there are more than 600 in the district, in units of 10 acres where required. The district pipes the water to the property line, the property owner paying for the meters. Water is measured in "acre feet" for irrigation use and in cubic feet for domestic use. An "acre foot" is equivalent to 25 miners inches of water for 24 hours, or 43,560 cubic feet, or 325,851 gallons of water.

The cost of the water cannot be definitely determined until the end of the irrigating season, but the law provides it shall be delivered to users at cost. The cost per "acre foot" for the 1918 season has been estimated at $5.00. Should the actual cost exceed that the users will be assessed to make up the amount. Should it be less the users will be given a rebate or a credit on next season's water bill.

Laying Steel Pipe on Lindsay-Strathmore Project

The increase in the citrus acreage in the Lindsay district during the past several years has gradually lowered the water table in the entire district and so taxed the producing capacity of the district that it was deemed advisable to secure an adequate water

supply from an outside source. And so the scheme of this irrigation district was evolved. It is sure to prove a large factor in the further development of this rich citrus bearing district.

TRACTOR DEMONSTRATIONS

Third Annual Tractor and Implement Demonstration of the Traction Engine and Implement Dealers' Association of Southern California will be held in the outskirts of Los Angeles on the Whittier Boulevard, September 17-21. There will be 350 acres of ground in the demonstration field, and about 60 acres given over to the exhibition tents makes for a great event.

Special significance attaches to the public demonstration because this furnishes the best opportunity for judging the merit of individual tractors. For the public demonstration each tractor is assigned a certain amount of land, allotted in proportion to the manufacturer's drawbar rating for the individual tractor. The amount is what the tractor should be able to plow in one hour's time if it does what the manufacturer claims for it. This allows the spectator to judge for himself whether the manufacturer's ratings are correct. At the beginning of the public demonstration all tractors are arranged in one line and begin work at a given signal. Thus the public demonstration becomes one of the most interesting events during each day. All tractors on the field are engaged in the same kind of work.

The 1917 demonstration was one of the biggest successes of any farm demonstration ever held in America, but this year's event will far outstrip it in size and importance, no expense being spared in making extensive arrangements. Over 100,000 visitors attended last year's meet, but it is predicted that not less than 150,000 will pass through the gates this year. Over 4000 automobiles were parked in a single day last year. Free parking space has been arranged to accommodate 10,000 machines daily this year.

No admission is to be charged. The demonstration grounds are located just one-half mile east of Los Angeles city limits on Whittier Boulevard, easily accessible from all points in Southern California.

NATIONAL HAY EXHIBIT ON DISPLAY

Albert E. Nicholls, president of the Nicholls-Loomis Company, who has recently returned from an extended trip East, attended the 25th Annual Jubilee National Hay Convention, held at Cleveland, Ohio. He reports the gathering a great success in every way.

One of the interesting features of the convention was the hay exhibit. Small sample bales of timothy, clover, Sudan, wheat, prairie and mixed hay, in fact all kinds and qualities, were on exhibit from various sections of the United States and Canada.

For the benefit of those interested, and believing that producers, consumers and dealers in California would be especially pleased to see same, Mr. Nicholls arranged for the shipment of these samples to Los Angeles, and they are now on display at the office of the company, 2505 Santa Fe Avenue, Los Angeles.

The National Hay Association was founded in 1893 with 50 leading hay shippers of the East. It has prospered and grown under wise leadership until at the present time approximately 1250 of the larger and more prominent hay shippers are represented in its membership.

A former president of the association, Geo. S. Bridge of Chicago, is now chief of the forage branch, quartermaster general of the army. The present officers are: Samuel Walton, Pittsburg, Pennsylvania, president; W. H. Toberman, St. Louis, Missouri, vice-president; Albert E. Nicholls, Los Angeles, 2nd vice-president; J. Vining Taylor, Winchester, Indiana, secretary-treasurer.

COVER CROP

Continued from Page 203

a harrow to cover the seed. After furrowing the other half is broadcasted over the furrowed land and followed by irrigation.

Time of Planting

In order to obtain a satisfactory growth before cool weather sets in, planting should be done not later than October 15. The sooner in, the better will be the growth made, although the writer strongly feels that a cover crop planted late is much better than no cover crop at all as the root growth seems to be made somewhat earlier than the top growth and it contains the nitrogen nodules.

Irrigation

It should be borne in mind that, as with the summer cover crop, sufficient water must be available for both trees and cover crop. Although lack of water in the fall does not cause the fruit to fall to any extent, it does have an effect on the size of the fruit. Competition for water between the trees and the cover crop is not desirable. The cover crop must be given enough water to prevent it from competing with the trees until the winter rains set in.

Amount of Seed

The following table is taken from Mr. Mertz's bulletin:

Crop	Pounds Per Acre
Melilotus indica and bur clover	20-30
Fenugreek	35-40
Vetches	70-80
Peas	90-100
Windsor beans	100-200
Lentils	60-70

Purple Vetch

Considerable publicity has recently been given to purple vetch as a green manure crop. It is true that it has shown many desirable features in the experiments at the citrus experiment station. It has produced almost twice the tonnage per acre and has shown more active growth during cool weather. Further it is not so subject to aphis as ordinary vetch. The only hindrance to its widespread use lies in the scarcity of seed, practically none being available for use this season.

SEED TESTING

During the year ending June 30, 1918, the California branch seed laboratory of the United States department of agriculture, located at Berkeley, has tested 2098 samples of seed. This represents an increase of 25 per cent over the previous year. Approximately 65 per cent came from commercial seed houses, ten per cent from farmers; 20 per cent was collected by the division of agronomy through its cereal smut campaign; five per cent came from the custom house in San Francisco; and five per cent from the food administration for California.

Two vital seed questions today under war conditions are: How pure is the seed? What percentage will germinate? The California branch seed laboratory receives seeds from California, Arizona, Nevada and Utah. Samples sent in care of the University of California, College of Agriculture, Berkeley, will be given prompt attention free of charge.

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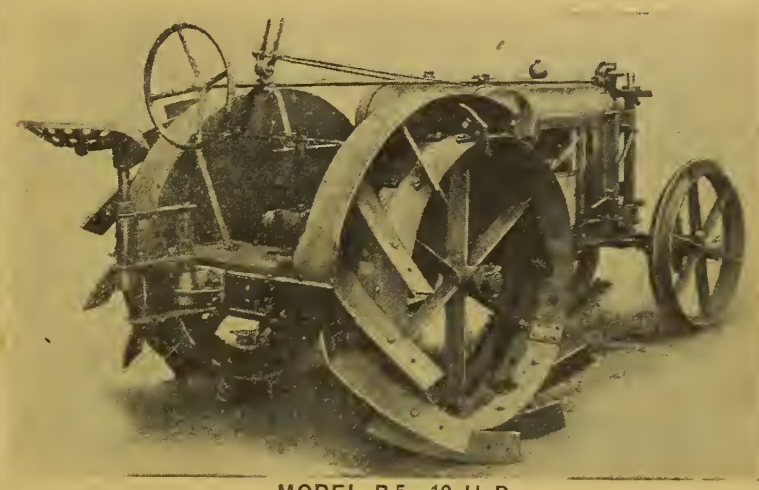

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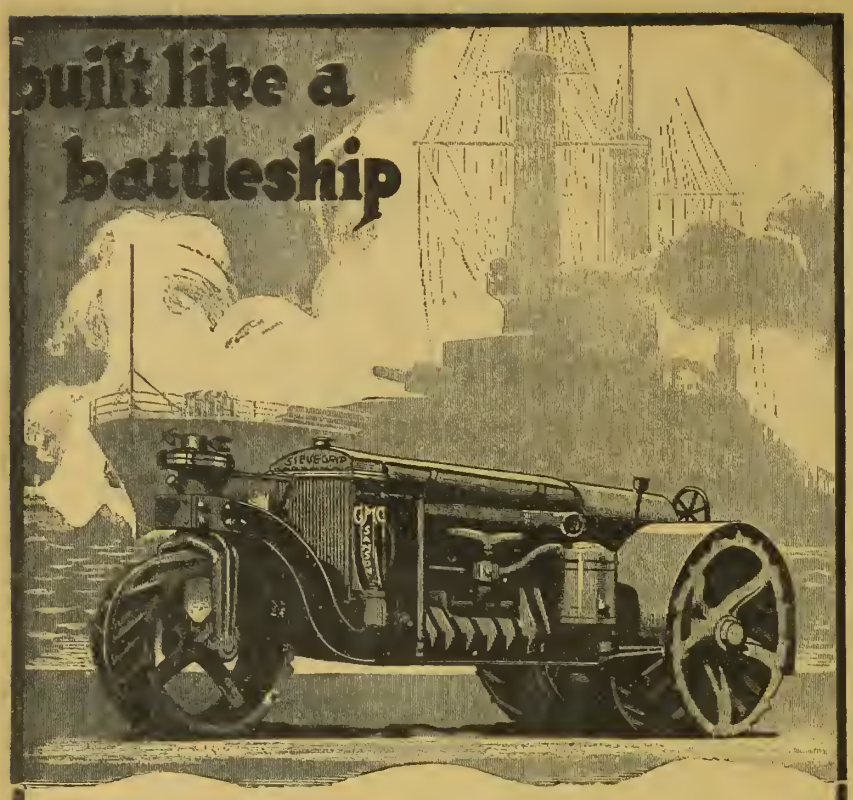

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Orange Details with Special Reference to Suckers

Written for California Cultivator By D. J. Whitney

IT IS a surprising fact that the importance of preventing suckers or water sprouts from growing up and becoming a part of a navel orange tree is not more commonly recognized by orange growers. It seems an undeniable fact that genuine, simon pure water sprouts, which grow straight up from the crotch of a Washington navel tree if permitted to do so until they rob the remainder of the branches of food and dominate the whole tree, will always produce rather inferior oranges resembling the Australian navel, if, in fact, the Australian navel is not actually derived from just that kind of growth.

Good and Bad Suckers

People have spoiled hundreds of trees by not knowing the difference between good and bad suckers. To pull off every long, green, soft, vigorous shoot under the belief that it is a sucker, is disastrous and prevents a tree from amounting to much. A genuine water sprout, the bad growth, comes usually from the crotch, off quite old bark, or perhaps a secondary crotch. It grows straight up with extreme vigor and may not branch for several feet. In a couple of years it will be as thick or thicker than other branches and the bark will show that it is much younger than they. This growth will keep on, showing in its nature that it is a different kind of wood from the rest, and it will rob the whole tree and produce only rough, second grade fruit and not too much of that.

A fruit wood sucker may come anywhere, but usually comes out from the branches; it may be extremely vigorous, but its branching, twisted habit, as practically all of these go off to the side somewhat, helps distinguish it from a water sprout, and then when it matures a little and the bark hardens and blackens, it can easily be recognized as fruit wood, while the bark of a water sprout will continue to show its real nature for a couple of years. The quicker a genuine water sprout is removed the better, but the more growth that can be put into fruit wood suckers the quicker they will make a bearing tree and the better the tree will be. An orange tree that is stunted too long always has difficulty in making good finally.

Prune Them Out

Just as soon as a man discovers that he has let water sprouts get established he should remove them, subject to special reasons for delay, for the longer they are in the more they will hurt the tree. R. W. Hodgson, assistant farm adviser of Los Angeles County, had this to say about removing established water sprouts in summer in Central California navel orchards:

"I am certainly of the opinion that water sprouts, if left in young navel trees, will starve the tree and cause a deterioration of what good wood there is. Although the starvation does not change the tree to the Australian navel, which is a separate sport, it does make the tree take on an Australian navel-like appearance. Sucker growth is fast growing, but deteriorates early, and the slow growing fruit wood is what is to be desired. The question of whether to remove these shoots at once or not depends upon, first, how much of an opening would be made in the trees by their removal, and, second, upon the size of these suckers.

"In your hot climate, unless the main limbs were whitewashed, you would be very apt to get sunburn following the removal of these vigorous water sprouts. Where this would not occur I would remove these objectionable branches at once unless they are too large. If there are several on a tree and they are quite large, the shock incident to their removal would result in the tree sending out a forest of vigorous vegetative growths which would require thinning and topping. In such cases I would distribute the response over the tree by removing the least objectionable at the present time. Then later in the fall I should take out the remainder."

Irrigation and Suckers

The more a person has to do with oranges, the more impotant becomes the question of irrigation. There are many sides to it, and one important side is the question of suckers. This comes about on account of the nature of the tree, its habits, the way it grows. For instance, it is often stated correctly that an orange tree quits growing when the ground gets a little too dry, and then when irrigation comes it does not start in growing from the place it left off but seems to think that the growth which stopped was old growth, and sends out new shoots. This explanation is doubtless clear. Just how this habit affects the tree if irrigation is done properly, or improperly, can be seen quickly.

A young tree, for example two or three years old, starts off growth in the spring. It naturally sends out quite a number of vigorous shoots, fruit wood suckers, if moisture is sufficient and cultivation attended to. Keep the ground properly moist and these shoots will keep growing and soft from one irrigation to another, and when fall comes the only long growths will be those which started out in the spring, and they will have continued enough to make quite long, sturdy branches. Check growth a bit by too long rests between irrigations and they will stop, and when growth begins with the next irrigation it will not be any strong continuance of the old shoot, but mostly a lot of new, small, fine twig shoots. The result at the end of the year will be a ball of dark foliage a foot or so greater in diameter than it was in the spring, and if it keeps up long enough the tree will never get to be any size and it will be nothing but a mass of fine, dead twigs in the center. This is the explanation of such a large number of small trees five to seven years old and as many feet high. The only way to make a tree is to irrigate frequently enough so that a shoot which starts in the spring will keep growing all season without stopping, for once it stops it stops for good.

Water Sprouts and Irrigation

Poor irrigation is likewise a first class way to put water sprouts in a tree. The orange is a tree which can send out shoots anywhere, from twigs or from old bark, even from the trunk itself.

The thing that makes shoots come from old bark, where they almost never ought to come, is to have that

bark get too tight. So, when the ground dries out too much during the time the tree wants to grow, the tree suffers for water, the bark tightens up, and then when new growth starts with irrigation, suckers jump out in a hurry from old bark or anywhere else and they have to be rubbed off. All that vigor ought to go in shoots, if it is a young tree, or into renewing the branches, if it is an old tree, but instead the new growth is checked. The time while the tree is waiting for water is lost and the new growth comes in the wrong way. Further, these shoots that come out from the old bark, particularly if they are on the crotch, are more likely to be water sprouts, wild wood, than fruit wood suckers, and so they are doubly bad.

So, while there is a great deal in knowing how to build up a tree in leaving or removing the right shoots, the basis of the thing is in soil treatment to start the growth in the right way in the beginning and then to keep it right. And this is only one side of it; gum disease, nottle leaf, June drop and many other features depend very largely upon irrigation.

Avocados All the Year

Written for California Cultivator By Ernest Braunton

DURING the past two weeks I have been visiting a few avocado growers, looking over the trees, crops, etc., and talking with the men who care for them. I am more than ever impressed with the future of this fine fruit. I am not dealing with the matter commercially nor advising the planting of orchards. I am not gathering statistics as to the acreage planted, what numebr of fruits are produced locally, those imported, the number consumed or probabe future consumption. I am thinking of the garden, the home orchard, and their owners.

I believe in avocados for home consumption and don't care a penny whether a fruit is ever sold or not. Personally I am very fond of the fruits and would see the trees planted in the home grounds of all who find the fruits palatable. I would plant two avocado trees in every yard, whether in the orchard or garden as pure ecomics, or as ornamentals, where they may serve a dual purpose. If I had space I would plant four trees for I find it quite possible in using four trees to provide for ripe avocados every month in the year, "a consummation devoutly to be wished," by yours truly at least. Avocado trees may be had that will furnish fruit four or five months continuously. Others are good for but two months. But a list of four may be found that will give us fruits all the year through, and we should have 'em.

Fine Shrubs

A few days ago I saw a garden in which were several fine masses of shrubbery, in some places a dozen or more of one kind of a solid mass. Three sorts dominated: escallonias, pyracanthas and cotoneaster pannosa. The effects were unusually good and all plants were in fine vigor. It is far better to have many of a few kinds than a few of many kinds. The last may be a botanic display or a horticultural museum, but the first only makes the "garden beautiful."

Edible Passifloras

The fruits of Passiflora edulis are the size and shape of a hen's egg, rather smaller, perhaps. In color they are a dull purple. When ripe, one end may be cut off with a knife and pulp and seeds squeezed out or sucked out directly into the mouth. In this way a child will sometimes eat a score in one day. The taste is somewhat like that of a strawberry guava, but still more sharply acid. Last week I had two glasses of jelly made from the pulp, the same being strained to keep out the seeds. The jelly did not set but it was fine. The color was orange. the flavor sharply acid. It was as clear as other jellies made by my better half, so I suppose it was properly jam. Certainly it was good, easily made, and cost little. The vine is quite hardy in local territory and will grow almost anywhere. You are advised to give it a trial.

Autumn Roses

Those who have rested their rose bushes during the past few weeks by allowing the soil to become thoroughly dry, may now prune for autumn flowers. The precise time to do this pruning is hard to stipulate as seasons vary so much. The aim should be to bring roses into bloom when hottest weather is over and yet obtain a fine crop before hard frosts injure these and other flowers. It is a short but glorious crop you should have "betwixt and between." The main crop should come in the spring and after starting rose bushes into bearing in the autumn it is better to again keep water from them to allow new growths to check and harden somewhat before cold weather comes. The rainy season may then start them up when it comes, for you are then beyond the control of growth. If you live in a frostless belt your rose troubles are slight.

Oiled Roads and Paths

Weeds in roads and paths are a serious handicap to garden work, for much time is consumed in the destruction of offending weeds and the time used should often be put on real garden work, so that the garden really suffers in order that its paths may be clean. The solution is not an easy one for the expense of treating walks cannot always be met with ease. Spraying or saturation of soil by a cheap weed killer is good only until a winter's rains wash it all away. A good oiling or a heavy spray with distillate and a sprinkling with sand will in time prove the cheapest treatment and this I would advise. A coarse rose on a watering pot is all the equipment necessary and a rub with a rag saturated with coal oil will quickly clean the rose after use.

Garden Seats

One of the first requisites of a public park is plenty of seats or benches. Why is the public so insistent upon having them when none are in use in the home garden? A garden of any extent without a seat is without a "soul" and devoid of comfort even though consisting of but one large city lot. In my own garden every visitor sits down unless having but a very few minutes to spare and visitors on business are seldom taken into the house, but use the garden seat. The house is for the family and friends and is not for the stranger or business caller. Have at least one garden seat in every home grounds.

The Glorious Springtime

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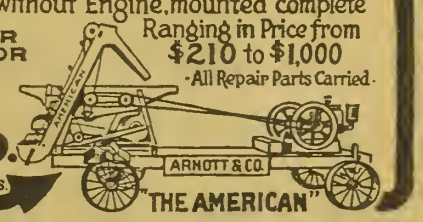

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sown seeds at all times of the year, but at no season has success been so great as in the spring time. This year I sowed both annuals and perennials once a month for four months. The first was sown just at close of the rains in March. This crop was glorious. One of the sorts was Shirley poppies. After the first sowing none responded so well though the same lot of home-saved seeds were drawn upon and soil was part of the same large bed, while treatment did not vary except in the increasing water supply. The fourth and last sowing of poppies, made in real hot weather, was almost a complete failure, though special care was given. It was made about the first of July. The seeds did not respond. There is no season like the good old spring time.

Coral Trees

Erythrinas or coral trees are not often found in small gardens yet I cannot see why they are so rare. They are very showy when in full bloom and at other times are interesting enough to prove an attraction, even when out of leaf. The color, size, shape, and habit of the flowers are good and I consider any species worthy of garden space. In cold locations the young plants are damaged by an occasional hard frost but none are killed and the vigorous output of new shoots when the gentle spring time comes cannot fail to awaken the admiration of all. The two or three species known locally are much alike and to the average garden owner are of equal value. But remember all are good and you should have one.

Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Anonymous

It is remarkable the number of thoughtless folks there are in this world. Every week, almost every day, letters come to the editorial desk asking for information, with no name signed. Presumably this is almost entirely due to the rush in which modern Americans live. The question is written and the letter slipped into the envelope, and on it comes to us to go into the wastepaper basket. One before us now is a request for the market news bulletins which are issued by the Los Angeles and San Francisco offices of the bureau of markets, U. S. D. A. Many blanks have been filled out and sent in for these reports, and they are turned over to the bureau. from which valuable reports are sent out. The blank we now have requests reports of five different crops and then leaves off the one important feature, name and address. Of course this was purely thoughtlessness, but we fear there is left in the mind of that subscriber the thought that the Cultivator has been delinquent in attending to its correspondence.

Irrigation of Walnut Orchard

We would appreciate it very much, if you could advise us, if an irrigation within the next two weeks would injure the crop on young walnut trees. We are anxious to plant a cover crop in some of the young orchards, and for that reason would like to irrigate at this time.—Inquirer, Santa Susana.

It is perfectly proper and in fact good practice to irrigate walnut orchards at this time of year. If the ground has been kept moist through the season and the trees are in good growing condition there will be no excessive new growth after the irrigation and the wood will harden properly before the cold weather. The irrigation will cause the walnut hulls to open and very materially assist in the work of gathering the walnuts. It is rather early in the season to sow a cover crop as the small seeds will not come up if covered too deeply and die if too near the surface and they do not have a further irrigation at the time the walnuts are being gathered, which it is very inconvenient to give, so it is usually best to gather the walnuts and then irrigate and sow the cover crop.—J. B. N.

Pruning Blackberries

Please give some information regarding bclackberry pruning, irrigating, fertilizing, especially as to pruning Mammoths.—Subscriber, Los Angeles.

Pruning of berries depends somewhat on locality and conditions. That is, long pruning of vines in section near ocean influences might be best, this so as to allow as much fruit as possible. In other words, allow vines to grow full length and support on trellis or wire. In the hotter interior valleys heading back, say in August or earlier, to induce heavy growth which will shade the fruit might be beneficial. Irrigate heavily after fruit is off, and cut out the canes which have borne this season. This will send strong growth into next year's bearing wood. In cutting back it is better only to take out tender tips which check the growth and induce heavy lateral growth. As to pruning Mammoth we quote from "Farm Questions Answered" as follows: "Mammoth blackberries must be trellised, and when pruning the fruitbearing wood of last year should be cut away entirely, thus depending upon the new growth for next season's crop. If these shoots are too close together they should be pruned out so as not to leave too much vine on the plant. The same rule applies to the pruning of dewberry, loganberry and Himalaya blackberry. All canes which have borne fruit should be removed during July or August. Fruit comes only from canes which are one year old."

As to irrigation, berries are not neep rooters, consequently regular and frequent irrigations are necessary, that is under normal conditions. One of the bigger berry producing sections of California which ships berries to Chicago in carlots and finds that they have excellent carrying qualities never irrigates. This section is in Sonoma County, but few other lands have sufficient moisture to perfect tbe canes for next year's fruit without heavy irrigation. As to fertilizing stable manure is best, used as a mulch.

Ancona Standard

I have some Anconas said to be well bred, and some of them are nearly all black. Which is considered the best, the black or the nicely marked black and white ones? — Subscriber, Long Beach.

The Standard of Perfection prescribes "about one feather in five ending with a white tip" over the whole body of the female, and the same for the male, except in the back, where one feather in ten should be tipped with white.—J. A. K.

Stick-Tight Fleas

My hens are infested with sticktight fleas. I never saw anything like it before. The fleas stick in patches around the head and under the bill. Have applied liberal applications of sulphur, coal oil and lard but the pests don't all die. Can you suggest a remedy?—Subscriber, Whittier.

Vaseline, applied liberally, is a sure cure for "stocktights." You may have to apply it several times, but it smothers every one if you give it a chance. You will have to rid your premises of these pests, however, if you want to keep them permanently off the chickens. That requires a thorough cleaning up and possibly moving to new ground, for if the soil is full of them cleaning does little good. — J. A. K.

Grain Ration for Goats

Please give best grain ration for milch goats.—Subscriber.

This question was referred to C. Lyman Shedden who answers:

One and a half pounds of oats divided between morning and night feed. I specify oats as barley should not be fed to does in milk. Bran of a desirable character cannot be obtained and beet pulp just at present is too high priced considering feed value. Goats varying in size and nervous temperament will consume varying amounts of feed, depending largely also on amount of exercise the animal has. My answer to question is a good average but will supplement same by stating that a safe rule for a novice is to feed animal all the grain she will eat before leaving it and no more.

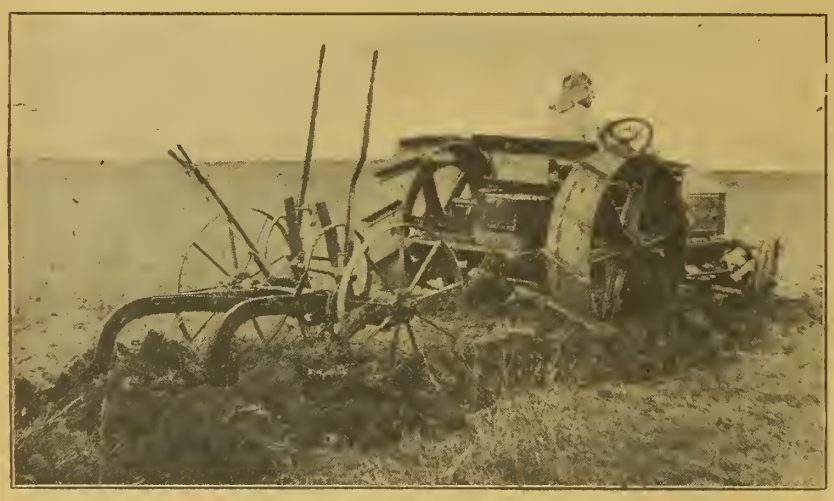
TRACTORS FOR MANY USES

The tractor is so valuable in many ways on the farm that there have been no end of uses for it. It will prepare the seed bed, pull tbe drill that puts in the crop, will pull the binder to harvest it, and drive the separator to thresh it.

Besides this owners may use them for feed grinding, baling, shelling, pumping, sawing and running any kind of machinery that runs from belt power.

It isn't a question of "Can I afford a tractor." It is a question of "How can I afford to get along without one." For economy of power at a small investment there is nothing that will equal a tractor. The longer you have one the more you will find how much you would not be without it.

Zieglers Tractor Attachment



Pulling 2 14-inch Gang Plows in adobe soil, previous to winter rains.

The Ziegler Tractor Attachment makes a solid, substantial tractor out of your pleasure car of any make—costs less than a pair of horses and will do the field work of from 6 to 9 horses—It has 48 inch rear wheels with 12 inch face, fitted with 18 2½ inch grousers which are easily removed for boulevard hauling. Anyone able to operate an automobile can operate this simple tractor.

Valuable territory open for live agents.

We will demonstrate the Ziegler attachment on any ranch within 100 miles of Los Angeles.

Write for descriptive circulars, prices, territory reservations and agents' terms.

Zieglers Tractor Attachment, 611 N. Western Ave. Los Angeles

See The

Cleveland Tractor

On The Back Page

Don't fail to carefully inspect the Cleveland Tractor at the State Fair

F. H. Stow Tractor Company

Distributors for No. California — Berkeley, California

WATCH FOR REGISTRATION DAY

The President of the United States will soon announce by proclamation, a Registration Day to be held as early in September as possible.

More than 2,000,000 men are needed to put our army on a 5,000,000 men basis. 13,000,000 are expected to register.

Class one is nearly exhausted. This Class must be replenished from new registrants not later than October 1st.

Who must register:

All men from 18 to 20 years of age, inclusive and
All men from 32 to 45 years of age, inclusive, should watch closely for the President's Proclamation, definitely designating who must register.

Where you will register:

In the customary voting precincts in the jurisdiction of your Local Selective Service or at other points to be designated.

Sick and non-resident registrants:

These will be furnished cards by their Local Boards. The sick will be registered by persons deputized to do so. Non-residents may register by mail through the County or City Clerk of the place at which they are stopping. Special provision will be made for felons, persons awaiting trial and others confined in jails or institutions.

The Government of the United States asks your hearty co-operation with your Local Board in making the registration a complete 100 per cent catalogue of every man of the ages to be announced in the President's Proclamation. Selection will take place later by the usual classification method.

The penalty for failure to register is one year imprisonment and NO man can exonerate himself by the payment of a fine

UNITED STATES OF AMERICA — WAR OFFICE

WATCH FOR REGISTRATION DAY!

Approved by
NEWTON D. BAKER
Secretary of War

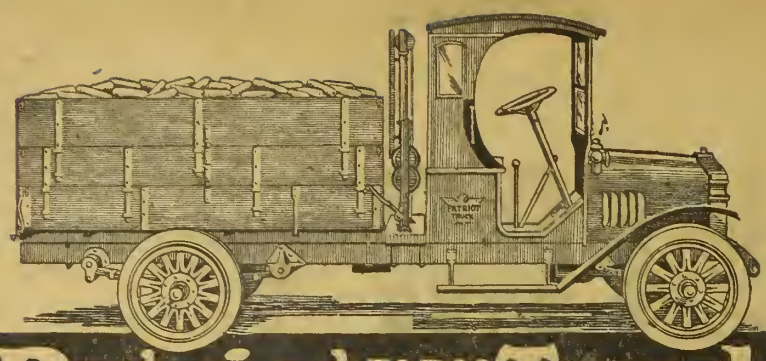
E. H. CROWDER
Provost Marshal General
United States War Department

United States Government
Commission on Public Information

Contributed through
Division of Advertising

This space contributed for the Winning of the War by

California Cultivator



Patriot FARM Truck

Built for Country Roads
Built for Country Loads

The Patriot is the first Motor Truck built especially for farm work. *It is equipped with a practical farm body,* similar to what you have always used on your farm wagon.

It saves horses and high-priced feed. *It brings better markets nearer,* for with a Patriot you can readily drive loads to a market 100 miles distant.

It lays down 15,000 to 20,000 pounds at market in practically the same time that a team will deliver 5,000 pounds, literally bringing the farm to about one-fourth its actual distance from market.

Business farmers can easily see how such perfect transportation greatly increases the value of their farms, to say nothing of the convenience in being master of roads and weather. Every farmer with 160 acres or more should find out what a Patriot Farm Truck will save. Write for information.

HEBB MOTORS COMPANY
Manufacturers of Patriot Farm Trucks
1339 P Street Lincoln, Nebraska

Lincoln Model
Capacity 3000 lbs.
Washington Model
Capacity 5000 lbs.

Powerful Patriot Hand Hoist by which the body, when loaded, may easily and quickly be elevated to dump its load.

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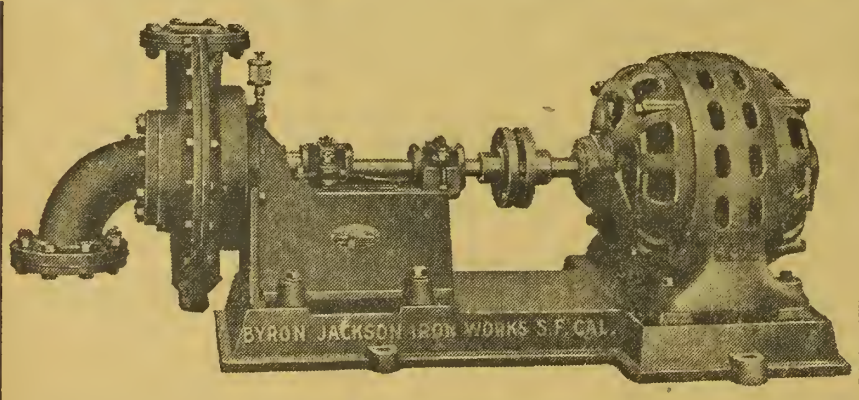

Have You a Producing Ranch?
If not, Why not?

The difference between a "live" and a "dead" Ranch is "Water" and "No Water."

"Byron Jackson" Pumps meet every water condition

Write us giving your water conditions and requirements.
Our New Catalog No. 60-B for the asking.

Byron Jackson Iron Works, Inc.
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CORN HARVESTER Self Gathering for cutting Corn, Cane and Kaffir Corn. Cuts and throws in piles on harvester. Man and horse cuts and shocks equal to a Corn Binder. Sold in every state. Price only $25 with fodder binder. The only self gathering corn harvester on the market that is giving universal satisfaction.—Dexter L. Woodward, Sandy Creek, N. Y. writes: "3 years ago I purchased your Corn Harvester. Would not take 4 times the price of the machine if I could not get another one." Clarence F. Huggins, Speermore, Okla. "Works 5 times better than I expected. Saved $40 in labor this fall." Roy Apple, Farmersville, Ohio: "I have used a corn shocker, corn binder and 2 rowed machines, but your machine beats them all and takes less twine of any machine I have ever used." John R. Haag, Mayfield, Oklahoma. "Your harvester gave good satisfaction while using filling our Silo." K. F. Kuegnitz, Otis, Colo. "Just received a letter from my father saying he received the corn binder and he is cutting corn and cane now. Says it works fine and that I can sell lots of them next year." Write for free catalog showing picture of harvester at work and testimonials.
PROCESS MFG. CO., Salina, Kansas.

Gardner's Bean Harvester

meets the requirements of the rancher and is within easy reach of all.

Ask your dealer about it, or send direct to factory.

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Correspondence with the advertisers in the California Cultivator will convince you that their articles will save you money.

What Are Non-Essentials?

Dean Thomas Forsyth Hunt of the college of agriculture of the University of California has made an attempt to define the much-debated term "non-essentials" as applied to the winning of the war. He says:

"What are the non-essentials, or the relatively non-essentials or the near non-essentials? They are those commodities and services which people buy in order to maintain the standard of living beyond that of primitive folk. The difficulty with this definition is with the word 'primitive.' It has been suggested that primitive people did not wear clothes. Even so, it answers my purpose, which is to call attention sharply to the fact that during war times standards must fall. Our methods of living must become more primitive. The higher our standards, the more apparent our sacrifices and also the greater our opportunities to win this war if only we are sufficiently determined to do so.

"This determination to live more simply is not the duty of any single class. To be effective it must be universal, each in accordance with his ability. The English now wear soft collars in order to emphasize the need for saving food materials. They have also started the 'Save a Match' campaign. The idea of both these campaigns is to emphasize the importance of even small savings, if universal. This is, of course, the basis of our own thrift stamp campaign. The whole basis for the winning of this war, as well as for the abundance of food, is simpler living.

"I have been tempted to start a pledge among men not to wear a necktie until peace is declared. Not because of the importance of neckties, but it would make visible to us the acceptance of the doctrine of simpler living as an important factor in winning this war. It would be much more emphatic than the wearing of buttons and other badges, for which I have a great personal antipathy. I have been told not to suggest so foolish a notion because I might be quoted as saying that the avoidance of neckties would win this war. Of course, a tieless brigade will not win this war, but the idea of universal saving which underlies it is essential. Let us look at it a moment. Is it conservative to estimate the use of two ties per person annually? A high school boy tells me six are required. Is it conservative to say that the average price of ties is 50 cents? There are 40,000,000 males in the United States over ten years of age. Forty million spending $1.00 each spends $40,000,000 annually. It would keep quite a number of Belgian babies from starving, or it would furnish a million overcoats for our soldiers. The men and women who now manufacture ties should, of course, be engaged in making clothing for soldiers.

"Our motto should not be 'How can I make more money?' not 'How can prices be controlled to our benefit?' but 'How can we live on less in order that our government may have the balance to prosecute the war more expeditiously and effectively?' If we do it voluntarily, we are a true democracy. Whether we do it voluntarily or not, we will do it eventually. True or false democracy, we must win. Democracy or no democracy, we shall win.

"Everyone may help to win this war if he chooses to do so. If he is not carrying a gun, it is by supplying his government with more commodities. There are only two ways that the individual can supply his government with more commodities. It is either by producing more or consuming less. Which are you doing?

"If all the billions of all the millionaires, and if all the war profits of all the profiteers were placed wholly and freely at the feet of the government, it would not help one iota toward winning the war unless thereby it resulted in the production of more goods in proportion to the consumption by the civilian population. It is you and I who must win this war. No one else can do much to help us. It does not matter how many speeches we make in public or private. It does not matter how much we denounce the kaiser; nor how many patriotic luncheons we attend; nor how many war committees we are connected with. Unless you and I in some way increase the surplus of commodities and give it to the government we are not doing a solitary thing to win this war.

"Military authorities agree, I believe, that a military decision in the strict sense of that term is highly improbable. If we win this war, as we surely shall win it, it will probably be because the civilian population of Germany is no longer able to turn over an adequate proportion of the commodities they produce.

"It does not make much difference in the long run what commodities you increase, so long as they are needed commodities. If the war lasts less than a year then it does make some difference because it is not possible for a great population to adjust itself to its new conditions in so short a time. In a similar manner it does not matter much what or how or where we save, if only we save, although for the immediate future there is some choice to be made. In the long run it does not matter whether we are consuming the time of the farmer in raising our food or the time of our tailor or dressmaker in making our clothes or the time of the movie actor furnishing us with entertainment.

"You and I will not help to win this war if while we are saving one dollar's

Home and Bean Ranch Near Ventura by the Sea

Home of Mr. and Mrs. Darveau overlooking the Pacific Ocean. It is to be noted that Mr. Darveau makes gas do much of his work but the pony and cart shows the children love animal life. The Shetland pony, by the way, was won by Miss Beulah Darveau in the California Cultivator subscription contest in September, 1916.

worth of wheat we are consuming two dollars' worth of gasoline; nor if when we are saving five cents on our laundry bill by wearing colored shirts we spend ten cents on cigars. When the Lord balances our account, He will find us in red ink. If there ever was anything personal it is this war.

"You and I may try to ease our consciences by blaming the profiteer, but we know we are not treating our consciences fair when we try to do it. No, my friend, there is nothing else to it. No matter who may be making unholy profits, it has little indeed to do with winning this war except as it affects the morale of the people. You and I must win this war."

Save Gas

Sixteen hundred automobile distributors and dealers, located in as many cities and towns throughout the United States and all identified with one of the larger auto manufacturers of the country, now are preaching the doctrine of gasoline conservation. The gasoline-saving poster, which is printed in colors and illustrated with views of aeroplanes, armored tanks, army trucks and military tractors in action, reads as follows:

GASOLINE
Will Help
Win the War
Don't Waste a Drop!

Our own government and our allies are using tremendous quantities of gasoline for war purposes. The need increases every day MORE motor trucks, MORE aeroplanes, MORE U-boat chasers, MORE motorcycles, MORE army dispatch cars, MORE Tanks, MORE tractors and MORE of other gasoline-using war machines are built and put into service.

Every gallon of gasoline this country can produce must perform some useful function in helping to win the war for America and the world. DON'T WASTE IT—DON'T BE EXTRAVAGANT IN ITS USE. SAVE ALL YOU CAN—SEE THAT OTHER PEOPLE CONSERVE IT.

A united effort to reduce all waste of gasoline will serve the allied cause, as well as bring a personal benefit to you in the more economical operation of your car.

Observe These Rules in Operating Your Car

Don't let engine run when car is standing. It is good for starter battery to be used frequently.

Don't spill or expose gasoline to air—it evaporates rapidly and is dangerous.

Don't use gasoline for cleaning and washing—use kerosene or other material for cutting grease.

Stop all gasoline leakages. Form habit of shutting off gas at tank or feed pipe.

Adjust brake bands so they do not drag. See that all bearings run freely.

Have carburetor adjusted at service stations of carburetor or automobile companies—they will make ordinary adjustments without charge.

Keep needle valve clean and adjust carburetor (while engine is hot) to use as lean mixture as possible. A rich mixture fouls the engine and is wasteful.

Pre-heat air entering carburetor and keep radiator covered in cold weather—this will insure better vaporization.

See that the spark is timed correctly with engine and drive with spark as fully advanced as possible without causing engine to labor.

Have a hot spark, keep plugs clean and spark points properly adjusted.

Avoid high speed. The average car is most economical at 15 to 25 miles per hour.

Don't accelerate and stop quickly—it wastes gas and wears out tires. Stop engine and coast long hills.

Cut down aimless and needless use of cars. Do a number of errands in one trip.

Know your mileage per gallon. Fill your tank full and divide speedometer mileage by gallons consumed.

Barley

"The Cultivation and Utilization of Barley" is the title of Farmers' Bulletin 968. The bulletin states that barley should be more widely grown in the Northern and Western states. It is a protection to our grain supply, as it produces a good, nonglutinous flour and can be milled by wheat mills with little change of machinery.

It is an excellent grain feed for stock, being almost the equal of corn. It, however, competes with corn in few places, as it is mostly grown outside the limits of profitable corn culture. It produces more pounds to the acre than oats or wheat. If necessary, it can be seeded later than spring wheat, and hence interferes little with the wheat acreage in the spring wheat region. It supplies the needed grain feed necessary for the increase of live stock, which some time must come with diversified farming in the areas where grain farming is now the only enterprise.

The best lands for barley are well-drained soils that are not sandy. The best returns are obtained from early seeding. The best methods of preparation are fall plowing in the humid-spring region, disked corn ground in the Great Plains, and summer fallow in sections where the crop is winter seeded. The best method of seeding is with a drill, and the best method of harvesting is with a binder. The grain should not be thrashed too close, as broken kernels lower the market value.

The bulletin may be secured by writing Division of Publications, Washington, D. C.

PRIZES FOR LIBERTY LOAN TALK

The Southern California Liberty Loan State Central Committee wants to hear some good talks on the Fourth Liberty Loan drive. To that end it will give $50 for the best, $30 for the second best, and $20 for the third best speech not exceeding 6000 words. Subscribers of the Cultivator who believe in liberty and the loan which will aid in securing it and can transfer their belief to manuscript with the proper degree of pep and punch have an opportunity for pulling down enough to buy one of the bonds of smaller denomination. We believe it will not be necessary to make actual delivery of the address; it may be submitted in manuscript form. The headquarters of the committee is at room 408, 315 West Fifth St., Los Angeles.

Vessels sailing from New York in June were cut more than 25 per cent in their sugar requisitions, to conform to the food administration ration.

Thousands of Western Farmers Look for the Giant Trade Mark

GIANT FARM POWDERS
STUMPING — AGRICULTURAL

The Giant trade-mark on each case of Giant Farm Powder is put there for your protection. When you see it you know you are getting the real Giant Farm Powder—the kind that has been cutting blasting costs for more than half a century.

Giant Farm Powders—Eureka Stumping and Giant Stumping—have become so popular that many other high explosives are often in error called "giant powders." Don't be misled. There is only one brand of Giant Powder. Demand the genuine.

"I have tried all stumping powders on the market under every practical working condition," writes James Foran, Big Lake, Wash., "hereafter I will use nothing but Giant." Joseph Labunski, Cedar Camp, Ore., says, "Whenever I use powder, it will be Giant."

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and you will receive free the big book "Better Farming." It shows how your head can help your hands in making farm work easier, cheaper and more profitable.

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Send me 52-page illustrated booklet "Better Farming." I am especially interested in (please check) 212

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and Help U. S. Win the War

Authoritative tests have proved that as high as 50 per cent increase in crop production may be expected from proper use of fertilizer. Do you realize what that increase means? Fertilizer is the basis of crop production, and compared to the prices of the crops they help to produce, fertilizers were never so cheap as they are today.

MORE CROPS

will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

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GIVES GREATEST VALUE FOR LEAST MONEY
IT MAKES THEM FAT

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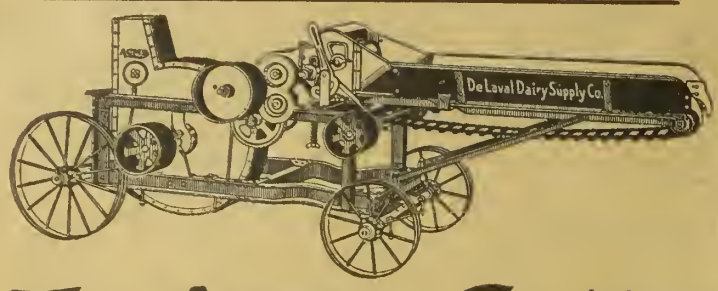
10% to 25% of Bulk Hay is Wasted.
Cut Feed is all eaten.



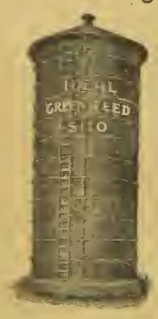
The ACME Cutter

This combined Silo Filler and Feed Cutter will pay for itself in one season on dry feed cutting alone.

Its compact steel frame construction, center hung blower and 3-bearing cutter shaft make it light-running, durable and economical on power.

BUILT IN SEVEN SIZES. CATALOG ON REQUEST

Order now while stock is complete in all sizes.



Ideal Green Feed Silos

Leak Proof **Permanent**

Do not make the mistake of buying a "cheap" silo or "cheap" silo material. You cannot save money that way. Silos that are offered to you with emphasis on their low price are expensive and wasteful. They do not preserve the silage as well and do not last as long as an Ideal. Every dollar you invest in an Ideal brings greater returns than money invested in any other.

De Laval Dairy Supply Co.

61 Beale St. **San Francisco**

AT THE STATE FAIR **Make the De Laval Booth Your Headquarters**

Pacheco Cattle Co.

Hollister, Cal.

Breeders of

Shorthorns

Leading Herd Sire, True Dale
367159 by Double Dale

Nothing For Sale at Present

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Hidden Valley Farm

Breeders of Registered Guernseys

Breeding for High and Consistent Production

Every cow in our herd on yearly test. Records for last month (July):

On test, average 155 days: Butterfat, 54.55 pounds.

This includes 25 per cent heifers with first calf. We have for sale some young bulls of serviceable age and a few heifer calves by Dairymaid's Prince 26353, whose first two daughters to come into milk made respectively

407.12 pounds butterfat in 265 days.

301.60 pounds butterfat in 201 days.

They are out of cows that are making large A. R. records.
Will be glad to show our stock at the farm. Correspondence solicited.

A. J. Welch, Owner **R. S. Adams, Supt.**

Redwood City, Cal.

Correspondence with the advertisers in the California Cultivator will convince you that their articles will save you money.

Need of Proposed Feed Control Law

By F. W. Woll

THERE appears to be a demand for a feed law in this state that shall protect stockmen and all buyers of feeding stuffs. To my mind the enactment of such a law by the coming legislature is of greatest importance to the live stock interests of the state. California is away behind most of the other states in the Union in the matter of feed inspection work. Connecticut, Massachusetts and Maine passed laws providing for inspection of feeding stuffs over 20 years ago, and during the following 10 to 12 years other Eastern and Central states followed the example set by them, until at the present time over 40 states have such laws on their statute books. It does not follow, of course, that a movement of great importance to one section of the country is necessarily important to other sections, but there can be but little doubt that the need for such legislation in this state is nearly, if not fully, as great as elsewhere.

California passed an inspection law for commercial fertilizers in 1903 which has saved users of fertilizing materials thousands upon thousands of dollars every year and insured buyers goods of a guaranteed composition and quality. There is every reason to believe that a similar law affecting the manufacture and sale of commercial feeding stuffs would prove of as great or greater importance to our stockmen whose annual purchases of feed stuffs run up into the millions. It is true that the feed market in our state does not include by-products from a number of manufacturing industries found in the states east of us, and that our feeding operations are as a rule simple, relatively few feeds being used by most farmers and dairymen in feeding their stock, but in the aggregate a large number of different feeds are obtainable in the state and are either sold separately or used by manufacturers in the making of mixed feeds.

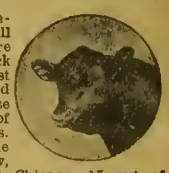
This fact was brought out in a striking manner by a recent study of commercial mixed feeds and their formulas submitted to the live stock commission of the food administration by feed manufacturers in the state. The 94 different feeds of which samples were submitted contained in all 102 different feed components, viz., 41 different flour-mill feeds (by-products in making flour or "cereals" from wheat, barley, rye, oats, rice, Indian corn, milo, Egyptian corn); 20 kinds of cereal grains and leguminous seeds; 12 miscellaneous mixed feeds, condition powders, etc.; 11 kinds of oil meals (cotton seed, linseed, cocoanut, soy bean, rape seed, mustard); 10 kinds of mineral matter, charcoal, etc.; 6 animal feeds (meat meal, tankage, blood meal, whale meat); 2 dairy feeds (dried skim milk, dried buttermilk).

Nearly all these feeds are subject to wide variations in composition and feeding value, and many are of low grade at times due to an admixture of worthless materials that may or may not be intentional. Under feed inspection laws the composition of all feeds must be guaranteed as regards their minimum contents of protein and fat (sometimes also carbohydrates), and maximum fiber contents. Samples are taken in the open market and subjected to chemical analysis and the results are published in bulletin form. With these facts before him the buyer can judge as to the quality of the various feeds offered for sale and the relative economy of feeds sold at different prices, and one may have every assurance that the large majority of manufacturers will furnish goods of the guaranteed quality.

Feed inspection work is of value also to the manufacturer, both because it gives him official backing as to the quality of his feeds and because it protects him from dishonest competition. We find that manufacturers who conduct their business on the principle of furnishing feeds of good quality at fair prices, appreciate the value of feed laws to them and generally give active, whole hearted support in securing the passage of the law as well as in carrying out its provisions when passed. Experiences from elsewhere have shown that states having no feed-control laws soon become the "dumping ground" for low-grade and adulterated feeds that cannot be sold in other states, and also that the quality of the feeds sold is gradually improved under feed control. This will no doubt be the experience in this state as well, and the best interests of the stock men and farmers of the state will, therefore, be served by the passage of a feed-control bill at the next session of the legislature. In order to bring this about candidates for election and the members of the legislature should be informed in no uncertain terms by individual farmers and through the various farmers' organizations that the law is wanted and that the farmers of the state consider it of more importance at this time than ever before to be protected from fraud and misrepresentation in the feed business.

High feed prices and occasional scarcity of certain feed supplies increase the temptation to put out low-grade feed materials and render protective measures even more necessary than during normal market conditions. It would be an easy matter to cite examples of the direct value of feed control work from past experiences, both personal and such as are given in official reports, but it is hardly necessary in order to convince the practical feeder that there is urgent need of improvement in the quality of the feed stuffs sold in the state, and that improvement will be likely to follow the enactment of a feed law. The practice of "buying a cat in the bag," as it were, is neither good business nor in accordance with modern ethics. Time was when the maxim "Let the buyer beware" was a ruling business principle in the world, but now the government extends protection farther and farther as needed and wanted and sees to it that the buyer may receive the kind of goods he expects and of the quality claimed. There should be no difficulty, there-

AT THE STATE FAIRS



Be sure to see the Aberdeen-Angus cattle. There you will have an opportunity at more than 25 leading live stock shows to inspect the choicest representatives of the grand champion beef breed. These show animals are samples of the best American herds. Their produce has won at the world's greatest live stock show, the International Exposition, at Chicago, 15 out of 16 fat carcass grand championships over all breeds, as well as 13 out of 16 fat carlot grand championships, 11 out of 14 steer herd grand championships, and 10 out of 16 single steer grand championships. Calves of the breed have been demonstrating their baby beef making superiority at shows and markets from Canada to Texas. The bulls of the breed have been getting market-topping steers at all leading markets, demonstrating their place in the winning of the war. **"Ask the man who owns some!"**

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F. P. Hall **Perris, Cal.**

fore, about having a feed inspection law placed on our statute books at the next session of the legislature if the farmers of the state make their wishes known.

TO SHEEP AND WOOL GROWERS OF CALIFORNIA

FOOD Commissioner Merritt is sending out this message:

Notwithstanding the fact that the food administration has no responsibility in connection with the growing or marketing of the nation's wool supply, the matter of maintenance of an adequate amount of meat for the use of our people at home and our soldiers in the field is so closely related to wool production. in so far as the mutton and lamb crop is concerned, that we feel it very proper and pertinent to urge upon the sheepmen of California such organization as will most effectively promote their industry in the state.

The following brief table shows clearly the relative decrease in the sheep industry in California as compared with the development of population.

Sheep Statistics in California 1890-1918

Year	Population per square mile	Sheep per square mile	Sheep per Capita	Increase in population ten years, per cent.	Decrease in sheep ten years, per cent.
1880	5.6	36.8	6.6	54.3	.....
1890	7.8	21.7	2.5	40.3	41.1
1900	9.5	18.0	1.8	22.4	16.9
1910	15.3	15.5	1.0	60.1	14.3
1918	20.2	16.0	0.7	32.	8.0

Estimated population for 1918 3,138,364; sheep, 2,225,000.

The marked decrease in the number of sheep per capita of population is so serious as to deserve serious consideration.

A movement recently inaugurated by the College of Agriculture to increase sheep production by a campaign for the establishment of a small flock of sheep on every farm is to be commended and deserves your most earnest cooperation.

The time is past when the interests of the sheepman and cattleman are considered to be antagonistic. The most effective use of the ranges of the state calls for an understanding and the closest cooperation among the sheepmen and the cattlemen.

The distribution of the range among sheepmen can be improved. There should be no necessity for sheep in the southern part of the state to be trailed or shipped to the northern part of the state, while northern sheep are ing and shipping should be eliminated by a more effective cooperation.

Cooperation in the use of shearing crews, by so scheduling shearing in different parts of the state that the same crew might go from ranch to ranch, is essential to the most efficient use of labor.

The use of better blood in the range flocks to the end not only that a higher wool clop may be secured but a better mutton carcass as well is most urgently needed in order that the largest possible amount of product in the form of mutton and wool may be had from the smallest number of sheep and the least amount of feed.

The present arrangement for the marketing of wool is temporary. Your attention does not need to be called to the advisability of the sheepmen having well in hand at the close of the war their own marketing machinery. This need is apparent.

The cattlemen and the hog men of the state have already formed organizations which promise to be of the greatest assistance to the food administration by affording central agencies through which they may be promptly reached by the government. An equally strong organization of the sheepmen would be appreciated by the food administration at this time.

VALUABLE TROPHY

Guy H. Miller writes that things will be doing in Jersey circles at the state fair. First, there will be a meeting of the California State Jersey Breeders' Association with a banquet and a genuine good time on September 3, at 8:00 o'clock. Mr. Miller writes "The association extends a cordial invitation to every owner and breeder of Jersey cattle at $2.00 per plate." In addition the state association will hold its annual meeting and election of officers on Wednesday, September 4, on the fair grounds. "Every member is expected to be present."

Another feature which is creating interest is the silver cup offered for the first time this year and to be put up for five succeeding years. The member winning it the greatest number of times in the five years will own the cup. The cup is for a class of five Jersey cows in milk during the time of the state fair. It is a handsome trophy and will be hotly contested for and will doubtless develop the one outstanding Jersey herd in California. There is a liberal entry in this class this first year of the offering.

A CYCLONE SILO Will Save You Big Money On Your Feed Bill

If you are in the farming business to make money you must save as well as earn—a silo will save you its cost in the first year of its use. With a silo you can convert into first-class stock feed a lot of your product that you have wasted in the past—

The CYCLONE SILO

—is constructed to stand up under the most trying conditions. Flat iron bands encircle the CYCLONE (as illustrated) in such a way that it cannot possibly twist or warp out of shape—does not get smaller at top than bottom after usage. No guy wires to stumble over.

We, who make this silo, have been manufacturing wood tanks, wood stave pipe, etc., for use in all parts of the world for 25 years—we know our business and our guarantee that this silo is right means something.

Our Silo Feed Book Is Free—Send for Your Copy

Write us for name and address of nearest agent.

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Let Us Quote
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Dear Sir: Please send me your Silo Feed Book.
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LONE STAR Registered Herd HEREFORDS Unregistered Herds

800 Cows and 50 Bulls Best of Breeding Show Winners. 4000 Head Both Sexes Same Breeding as Registered Herd
All stock guaranteed as represented. Write for terms and particulars. We offer for immediate delivery, 200 two year old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.
Scharbaur & Eidson, Midland, Texas **Elevation 3000 Feet**

Hopland Lass 179452, Grand Champion Cow, Sacramento, 1917.

Shorthorns ***Berkshires***

Hopland Stock Farm

Hopland, California

Registered Herd and Range Bulls by Right Choice 28951, and Tule King 304655.
Visit our Exhibit at State Fair.
A limited number of Boars and Gilts sired by

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Reserved Grand Champion State Fair, 1916, and son of Rival Champion 112500.

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Arabian-Thoroughbreds

Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion, and Don Castano, five gaited saddle stallion, winner in many prominent shows.

Mammoth Jacks

We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

Poland China and Berkshire Boars

Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

Correspondence Invited

Anita M. Baldwin

Santa Anita - Calif.
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Registered young bulls from best families.

REGISTERED BERKSHIRE PIGS

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Careful attention given to mail orders.

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Safe sales are good for the buyer and best for the seller in the long run.

We accept high class registered animals in our consignment sales, or will sell your whole herd. Write us.

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Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 126982, Grand Champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Bldg., San Francisco
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a big knee like this, but your horse may have a bunch or bruise on his ankle, hock, stifle, knee or throat.

ABSORBINE
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will clean it off without laying up the horse. No blister, no hair gone. Concentrated — only a few drops required at an application. $2.50 per bottle delivered. Describe your case for special instruction and Book 8 R Free.
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Registered Shorthorns
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Berkshires—Both Sexes

H. L. & E. H. Murphy
Perkins, Cal.

Horse Breeding in California.

Written for California Cultivator By Wayne Dinsmore, Secretary Percheron Society of America

WITH the constantly increasing demand for good big work horses throughout the United States it seems positive that there are many California farmers who ought to be devoting at least some effort toward the production of good draft horses. We fully realize that climatic conditions in California are particularly suitable to the use of tractors, and yet there is always some work on every farm which must be done by horses. Automobiles have taken the place of light horses to go to town on errands where a heavy load is not hauled, and the tractor is found a very useful implement in some kinds of farm work. But the good heavy chunk farm horse that is an easy keeper and a good mover should still have a permanent place upon every farm. No farm, regardless of location, can be run most economically and on a lasting basis without such horses. The need for horses is imperative.

An analysis of the California Stallion Board reports made recently by the Percheron Society of America show that in 1917 there was a decrease of 64 head of pure bred draft stallions licensed as compared with the previous year. It is evident that this falling off is not due to the fact that draft horses are not suitable and that light horses are more effective because in 1916 there were 162 pure bred light horses licensed in the state and in 1917 there were only 85—77 less than were enrolled during the 12 months before. This is a greater decrease than was made in draft stallions. As the figures now stand, there was only one pure bred draft stallion to every 1088 horses owned on the farms and ranches and only one such sire to every 194 farms. A further analysis of this stallion board report indicates that there is only one pure bred draft stallion in California to every 343·60 square miles. No other state needs to look to her horse interests more than California. Just as her farmers need to be encouraged in the production of better hogs, cattle and sheep, so should the economic importance of raising a better class of farm horses be pointed out to her farmers. The farmer who can see far enough ahead to realize his opportunity in horse production is bound to make plenty of money if he acts; and the sooner he does it the better.

Make Soft Cheese at Home

Neufchatel and cream cheese, two of the groups known as soft cheese now made almost exclusively in factories with extensive equipment, can be made in the home. The department of agriculture has worked out a method for their manufacture which is simple and does not require elaborate equipment. The plan offers an excellent opportunity for the disposal of surplus milk on the farm and enables farm housewives to make a fresh, wholesome and attractive food at home.

Neufchatel cheese should be made from whole milk that tests about four per cent, and cream cheese from milk testing six per cent butter fat. Both are made in this way: To a quantity of 30 pounds, or three and one-half gallons of milk, add a pint of good starter or clean flavored sour milk and stir well. Warm the milk between 80 to 83 degrees Fahrenheit. Then add about eight drops of rennet which has previously been dissolved in a cup of cold water. Stir in thoroughly and set the milk aside to curdle. Powdered pepsin (one-half the size of a pea) or one-third of a junket tablet may be used in place of the rennet. The cheese may be made without a starter, in which case the milk should be ripened (allowed to stand at 70 degrees Fahrenheit) for six or seven hours before adding the rennet.

After 16 or 18 hours, the time usually necessary for proper curdling, pour the milk into a drain cloth and allow to drain from two to four hours or until practically no whey drips from the cloth. Then place the bag of curd between two clean boards, put a 50 pound weight upon it and let it stand for six or eight hours. Remove the curd from the cloth to a pail. Sprinkle two level teaspoons of fine salt over it, and thoroughly mix with a potato masher until it has a smooth buttery consistency. Running the cheese through a food chopper or working it with a butter worker produces the same result.

The cheese should then be placed in a crock or enamel dish until ready for use and kept at a temperature of 50 degrees Fahrenheit or below. If it is to be sold, it should be molded into small packages and wrapped in tinfoil, or packed in glass jars.

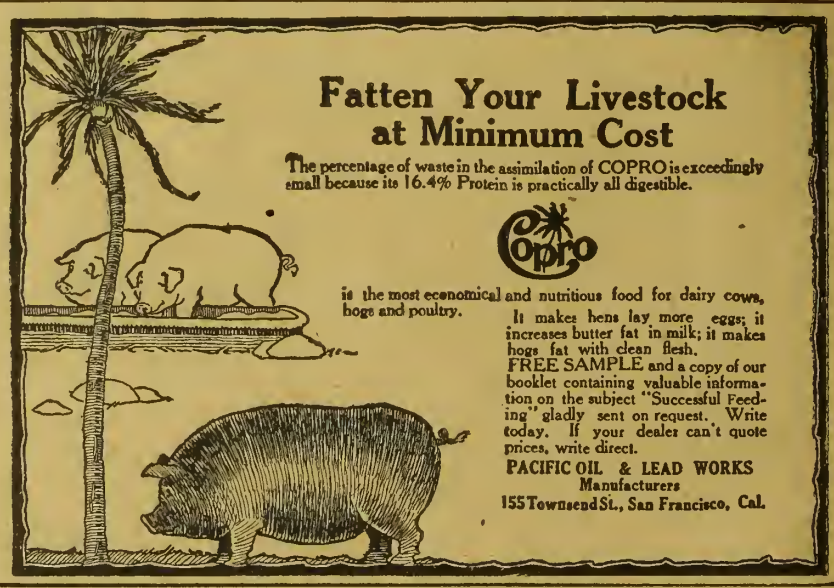
In nutritive value these cheeses compare favorably with other staple foods, especially meat. They are rich in protein and fat and are easily digested. Perhaps the most desirable ways to serve them are in the forms of salads, sandwiches and in combination with other foods such as olives, green peppers, pimientoes, pickles, different kinds of nuts, various vegetables and nearly all fruits.

ORLAND JERSEY CATTLE CLUB

The Orland Jersey Cattle Club held a lively meeting at the Dr. Hand Farm, Thursday, July 25. It was decided that the club have a special Jersey booth at the Glenn County fair which will be held September 16-21 at Orland. The space will be 10x14 in the main tent and is to be used as a Hostess House. It will be a place where fair visitors can rest, write letters and meet their friends. There will be good "Jersey literature" for everybody and easy chairs to rest in while you read it. The name of every member of the O. J. C. C. will be easily obtained; also the pedigrees of their stock and what they have for sale.

The club is going to make a heavy entry in the county fair. Also the Orland Jersey Cattle Club will be well represented at the California state fair. Dr. Hand and S. F. Williams are going to enter a carload of their fine stock.—Mrs. Jacquelyn Nickell, Secretary.

Food control in North America today means chiefly getting the food across the Atlantic at all costs.



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is the most economical and nutritious food for dairy cows, hogs and poultry.

It makes hens lay more eggs; it increases butter fat in milk; it makes hogs fat with clean flesh.
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Registered Herefords
Herd and range bulls reasonable. Largest Hereford herd in California.
W. D. DUKE, Likely, Modoc Co., Cal.

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Anxiety, Repeater, and Bonnie Brae breeding. Bred and raised on mountain range.

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A large herd of selected stock to choose from.
Everything sold is guaranteed as represented.
Why send East for breeding stock when we can supply your needs. Save time and money by writing us for particulars.

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Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 426982, grand champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Building
San Francisco

CARRUTHERS FARMS
Mayfield, Cal.

Seven Years Silo Experience

Written for California Cultivator By Geo. A. Smith

I HAVE used two reenforced concrete silos for seven years. They are 20 feet in diameter and 40 feet high. Walls are eight inches thick at bottom and five inches thick at top, reenforced with electric welded wire like the Pittsburg hog fence only much heavier and wider. The wires at the bottom of the silo wall are one-quarter inch, three-sixteenths about half way up, one-eighth near the top. It is the same as that used in the floors of reenforced concrete buildings in cities and comes in rolls and is eight to ten feet wide, and has proven very satisfactory as there is not a crack in the silo after seven years of use.

Reenforced Concrete Silo

Silo on place of James McGillivray, Sacramento, holds 600 tons of corn silage or 800 tons of alfalfa silage.

I have used first crop alfalfa in which there was considerable foxtail, bur clover, alfilaria, barley and other grasses that came in the first crop. I do not run this through a feed cutter but put into the silo whole with a hay derrick. I haul it to the silo from the field immediately after cutting so as to get it into the silo as green and wet as possible. I do not stop for rainy weather, which sometimes occurs in March and April. It keeps perfectly, and is not hard to remove from the silo. I have used some this year that was three years old and found it just as good as the first year. If I do not use it all in any one season I take off the top that is spoiled and put the fresh silage in on top of that which is left in the silo. I use about 15 pounds of salt to the ton.

I have also used Indian corn, kafir corn, milo, feterita and sugar cane. I have also mixed these with good results. These are all run through the feed cutter and a half inch stream of water added. I also use about 15 pounds of salt to the ton of silage with these feeds.

I regard Indian corn silage as the best. Corn silage with alfalfa hay or alfalfa pasturage is pretty hard to beat as a milk producer. My cows produced twice as much last winter as my neighbors who did not have silos. When they were getting from one-third to one-half pound of butter fat per day per cow I was getting one and a quarter pounds of butter fat per cow. The quality of the cows, of course, had something to do with the yield. Neither feed nor breed is the whole thing, but both go very well together, and success in the dairy business is extremely doubtful unless they do go together. I would not think of running a dairy without a silo no matter how much alfalfa I had. Cows need a variety of feed. Nothing but alfalfa all the time is not the best. Reenforced concrete silos I believe are the best and I believe the cheapest in the end. The older they get the better they are, which can be said of no other silo. Concrete improves with age.

I am now, August 20, planting vetch and barley, 25 pounds of vetch and 25 pounds of barley to the acre, for silage next spring to be fed out in the summer before the corn silage is ready again, and also for green winter pasture. I aim to keep up a full flow of milk through the winter.

Stave Silo Being Filled with Rye

The power to operate the cutter and elevator is from electric motor which is very satisfactory and available.

"Slipping" not "Saving"

"I kept slipping back two feet every time I went ahead one." That's what the small boy gave as an excuse to his teacher for being late for school one winter day.

And that's just what is happening to the cow owner who is trying to get along without a cream separator or with an inferior or half-worn-out machine. Like the small boy he is "slipping." He thinks he is thrifty, but for every dollar he saves by not buying a De Laval he loses two through not having one.

It *isn't* economy to do without labor saving and money saving and food saving machines. It *isn't* economy to feed 40-cent butter to the calves and hogs.

It *is* economy to buy and use only the best cream separator made—and that's the De Laval.

Viewed from every standpoint—clean skimming, ample capacity, ease of operation, freedom from repairs, durability—there is no other cream separator that can compare with the De Laval.

It's real thrift and genuine economy to buy a De Laval Separator NOW.

Why not see the nearest De Laval agent at once! See a new 1918 De Laval machine for yourself. Try it to prove every claim made for it. If you don't know a De Laval agent write direct to one of the addresses below.

DE LAVAL DAIRY SUPPLY CO.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST.
Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Acme Ensilage Cutters and Blowers, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Catalogs of any of our lines mailed upon request.

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STANISLAUS COUNTY LEADS
All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

Pelandale Holsteins
Headed by Hazelwood Mercedes Posch Ormsby. Good young bulls and a few registered cows for sale.
J. A. Pelanda, Rt. B, Modesto, Cal.

HOLMES STOCK FARM
Registered Holsteins of best breeding. Young bulls for sale.
R. L. Holmes Modesto, Cal.

Segis Pontiac De Kol Dutch
Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. E. E. Freeman, Rt. B, Modesto

Thompson's Registered Holsteins
Young bull calves for sale with yearly record backing.
Luther Thompson, Rt. A, Box 351, Modesto Cal.

SUNNY STANISLAUS
The county where "Water—Wealth—Contentment—Health" as well as the county where are some of the finest dairies in the world.

Our Senior Herd Sire is KING KORNDYKE HENGERVELD ORMSBY 7th
Five of his sisters sold at public auction for $23,800, an average of $4760.
This blood has made some of the world's greatest producers.
Our junior herd sire is TOYON KING KORNDYKE SOLDENE, son of a 33.23 pound daughter of King Hengerveld Aaggie Fayne.
Young bulls for sale. No females.
REGISTERED BERKSHIRE BOARS, sons of the $1500 boar Star Leader, for sale.
Kounias Registered Stock Farms, Modesto, Cal.

Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, $2145 cash awards. Write to

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Hanford, Kings County, Cal.

GROZ-IT

Highly Concentrated Pulverized

Manure

A mixture of cattle and sheep manure from animals fed on cotton seed meal and cake and alfalfa (highly nitrogenous foods) aged for several years under climate conditions that remove moisture but prevent leaching and fermenting.

No odor.

No flies or insects.

No weed seed or foreign matter.

Many times plant food values of ordinary manure.

Guaranteed contents.

Nitrogen, 1.5 to 2.0 per cent.

Phos. Acid, P_2O_5, 1.25 to 2 per cent.

Potash K_2O water soluble, 4 to 5 per cent.

We are shipping GROZ-IT in immense quantities to Southern and Eastern states, where present freight rates make it $10 per ton more than cost to you. Place your order now to insure delivery.

Sold in bags or bulk.

Write for circular and prices.

Also Ordinary Manure in Carloads

Horse-Sheep-Cattle and Rotted Manures

Pacific Manure & Fertilizer Co.

429 Davis St., San Francisco

Cleveland Tractor

$1600 f.o.b. Los Angeles

See Adv. Back Cover

Entered in Tractor Demonstration

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F. T. Briles, S. Cal. Distributor

214-216 No. Los Angeles St., Los Angeles, Cal.
Branch House—110 Main St. Porterville, Cal.

Restaurants and hotels are restricted to two pounds of sugar for every 90 meals served. This includes sugar for kitchen as well as table use.

Judging Fowls for Egg Production

ONE of the most carefully conducted and helpful egg laying contests is the Northwestern, under direction of the state college of Washington at Pullman. It is under the management of Helen Dow Whitaker. Especial effort has been made to determine conditions which make for a more profitable poultry industry. The next contest conducted by the state college begins on November 5. The director is now sending out entry blanks with rules and regulations of the contest. Among the literature sent out is a report of a committee on judging fowls for egg production, which appears below:

In order to lay well a bird must have a sound body. As a first consideration a bird must be vigorous and healthy if it is to be able to lay well. Vigor and health are shown by a bright, clear eye, a well set body, a comparatively active disposition and a good circulation.

Further, the bird must be free from physical defects such as crooked beak, excessively long toe nails, eyelids that overhang so that the bird cannot see well, scaly leg, or anything else that would keep the bird from seeing or getting an abundance of food.

Loss of Fat Due to Laying

Color or pigmentation changes. (These should be observed by daylight.)

A laying fowl uses up the surplus fat in the body, especially it removes the fat from the skin. In yellow skinned breeds this loss of fat can readily be seen by the loss of the yellow color. The different parts of the body become white, according to the amount of fat stored in the body and the amount of circulation of blood through that part. The changes occur in the following order:

The vent changes very quickly with egg production so that a white or pink vent on a yellow skinned bird generally means that the bird is laying, while a yellow vent means a bird is not laying. It should be recognized that all yellow color changes are dependent on the feed, coarseness of skin and size of bird. A heavy bird fed on an abundance of green feed or other material that will color the fat deep yellow will not bleach out nearly as quickly as a smaller, paler yellow bird.

The eye ring, that is, the inner edges of the eyelids, bleach out a trifle slower than the vent. The earlobes on Leghorns and Anconas bleach out a little slower than the eye ring, so that a bleached earlobe means a little longer or greater production than a bleached vent or eyelid.

The color goes out of the beak beginning at the base and gradually disappears until it finally leaves the front part of the upper beak. The lower beak bleaches faster than the upper but may be used where the upper is obscured by horn or black. On the average colored, yellow skinned bird, a bleached beak means heavy production for at least the past four to six weeks.

The shanks are the slowest to bleach out and hence indicate a much longer period of production than the other parts. The yellow goes out from the scales on the front of the shanks first and finally from the scales on the rear. The scales on the heel or rear hock joint are the index as to the natural depth of yellow color of the bird. A bleached out shank usually indicates fairly heavy production for at least 15 to 20 weeks.

The yellow color comes back into the vent, eye ring, earlobe, beak, and shanks in the same order that it went out, only the color returns much quicker than it goes out. A vacation or rest period can sometimes be determined by the tip of the beak being bleached and the base being yellow.

Body Changes Due to Laying

A laying hen has a large, moist vent showing a dilated condition and looseness as compared with the hard, puckered vent of a non-laying hen.

Heavy production is shown by the quality of the skin and the thickness and stiffness of the pelvic arches. Fat goes out from the skin and body with production so that the heavy producers have a soft velvety skin that is not underlaid by layers of hard fat. The abdomen in particular is soft and pliable. The sternal processes are very prominent and are generally bent outward. The thicker and blunter the pelvic arches and the greater the amount of hard fat in the abdomen the less the production or the longer time since production.

One of the finer indications, but yet one of the most valuable in picking the high layer is the fineness of the head and the closeness and dryness of feathering. The head of a high layer is fine. The wattles and earlobes fit close to the beak and are not loose and flabby. The face is clean cut. The eye is full, round and prominent, especially when seen from the front. The high layer is thinner, that is, the feathers lie closer to the body and after heavy production the oil does not keep the plumage relatively sleek and glossy but the plumage becomes worn and threadbare.

Changes in Secondary Characters.

The comb, wattles, and earlobes enlarge or contract, depending on the ovary. If the comb, wattles and earlobes are large, full and smooth, or hard and waxy, the bird is laying heavily. If the comb is limp the bird is only laying slightly but is not laying at all when the comb is dried down, especially at molting time. If the comb is warm it is an indication that the bird is coming back into production.

Molting

When a bird stops laying in the summer she usually starts molting. The later a hen lays in the summer or the longer the period over which she lays, the greater will be her production, so that the higher producer is the late layer and hence the late molter. The length of time that a hen has been molting or has stopped laying can be determined by the molting of the primary feathers. It takes about six weeks to completely renew the primary feathers next to the axial feathers and an additional two weeks for each subsequent outer primary to be renewed.

Temperament and Activity

A good layer is more active and nervous and yet more easily handled than a poor layer. A high layer shows more friendliness and yet elusiveness than a poor bird. A low producer is shy and stays on the edge of the flock and will squawk when caught.

While the characters discussed have dealt specifically with the current year's production it should be borne in mind that a high producer one year is, generally speaking, a high producer in all other years.

NATIONAL EGG LAYING CONTEST

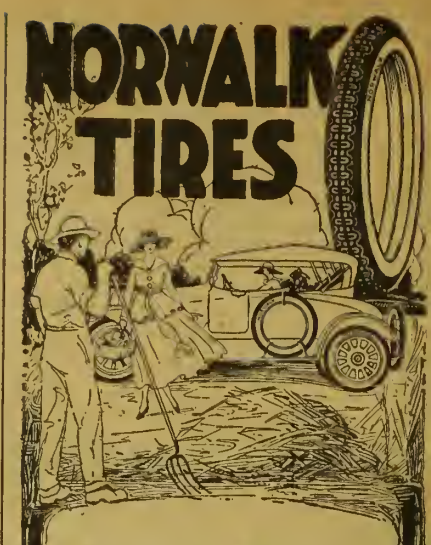
By T. W. Noland, Director

Mountain Grove, Missouri. Pen 36, S. C. White Leghorns, from Missouri, won the cup again for July, with a record of 127 eggs, having won four cups in succession. The total number of eggs laid in July was 4670, or an average of 15.57 per hen. Following are the leading pens for each variety for July:

S. C. White Leghorn, Missouri, 127 eggs; S. C. Reds, Missouri, 111; R. I. Whites, New Jersey, 111; W. P. Rocks, Idaho, 110; W. P. Rocks, Illinois, 110; Anconas, Missouri, 110; W. Wyandotter, Missouri, 109; Barred Rocks, Michigan, 108; Buff Wyandottes, Missouri, 102; R. C. Reds, Missouri, 95; Buff Rocks, Missouri, 91; S. Wyandottes, Missouri, 91; S. C. Brown Leghorns, Missouri, 89; Buff Orpintons, Missouri, 77; Black Orpingtons, Indiana, 71; White Orpingtons, Missouri, 70.

The ten leading pens to date are as follows:

White Leghorns, Missouri, 926 eggs; Whites, New Jersey, 914; Wyandottes, Missouri, 913; Rocks, Michigan, 893; Missouri, 889; Reds, Missouri, 866; Wyandottes, Illinois, 856; Orpingtons, Missouri, 846; Rocks, Missouri, 839; Wyandottes, Missouri, 823.



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Arise their battlements.
They do not wear a warrior's dress
Nor march to thrilling drums,
Yet mighty in their lowliness
They fight till Wrong succumbs.

The Soldiers of the Humble Deeds,
Who save the light and heat;
Who keep with joy the holy fast
That gives the starving meat;
The woman whose swift needles clothe
The bearer of her lance;
Yea, every praying, toiling heart
Defends our flag in France!

The Soldiers of Obscurity—
They hide their wounds and grief
And guard against despair and doubt
The forts of their belief.
They keep the faith, for on them rests
Their great Republic's fate—
From them its heroes draw the strength
To shield and save the State!
—Daniel M. Henderson of Vigilantes.

WHAT IS IN THE GERMAN NODDLE?

WHAT do the Germans think about it?

We have counted the odds and the conclusion is inevitable; there is no chance for Germany to win.

The Germans, also being able to count, must have come to the same conclusion. What then is in the German mind and heart as they continue to fight a desperate and hopeless fight that can have but one ending?

The answer is not very difficult. From their own mouths we know pretty well how the German have "figured it out."

Briefly stated, their hope is to hold the line on the west front while they build for themselves a strongly defended nest in Russia.

The military caste, which still rules the German empire, states the case somewhat as follows to its own inner consciousness:

"We have failed in our effort to lick the world and establish an empire reaching from the Persian Gulf to Hamburg. We have also made the whole world hate us. There will come a very hard time immediately following the war. We will have to suffer a trade boycott. The thing for us to do is to dig into Russia. We will build up a trade there to compensate us as far as possible for the world trade we are sure to lose.

"Having bullied the Russians into a practical monopoly of their trade we will sit tight and wait.

"We will carefully and secretly lay our plans for another war. Sooner or later, the nations now forming the Entente will fall apart. Then our chance will come. We will leap at the throats of the separated Allies. We have made some serious mistakes in this war. We will not make them again. In the next war we will whip the world to a standstill."

That, in a nutshell, is the German idea.

Had it been possible, the Germans would have wrenched the French and English armies apart; driven the British back into the channel; taken Paris and ended the war then and there last March.

It not being possible (and they never more than half believed in it), the Germans have fallen back on a substitute plan of national procedure as subtle and as dangerous to the world as was the Mittel Europa scheme, now abandoned.

This new plan, like all German world ideas, is a mixture of army, diplomacy and commerce.

The real theory of the kaiser's Hamburg-to-Bagdad world dream was to cut England off from India and drive a tap pipe into Africa and South American trade.

This world dream has now become an acknowledged impossibility. The Germans frankly admit that the efficient safeguarding of the Suez Canal, the British advance in Mesopotamia and conquest of Palestine have blocked the way to the Persian Gulf.

The collapse of Russia, however, has provided a complete substitute for this enormous and far-reaching conspiracy. For the Hamburg-Bagdad idea, the Germans have simply substituted the "Looking toward the East" policy so dear to the heart of Bismarck.

It is in every way as dangerous as the other. It simply changes the route. Instead of cutting England off from India, it has for its objective the penetration of India itself along a new route that borders the Caspian Sea and crosses Afghanistan. For the trade of Africa and South America, it substitutes the trade of Russia.

With Russia as a meal ticket, the Germans figure that they can eke out a living until "Der Tag" comes again, when they hope to go crashing through the Khyber Pass into India—the heart of the British empire.

A certain time, however, must elapse before they can establish themselves in Russia. To gain this time, they are fighting desperately to hold back the American and the French and the British on the west front. They have no hope left of victory in France. They are in their hearts resigned — completely resigned — to the surrender of Belgium. They want to hold Lorraine on account of the iron mines. Otherwise they have no real ambition in Western Europe.

All they want is to keep us busy elsewhere while they build their commercial fences in Russia. Having done so, they will eagerly sue for peace. Then sit down and wait for a chance to bring about another world war.

None of the above statements are guesswork. They are the demonstrable facts of the situation.

Anyone with the slightest knowledge of military matters can see Germany already at work on her next world war.

Her conspiracy to dig into Russia's commerce and her plot to seize the Russian path to India can scarcely be called "conspiracies" or "plots." In the east, Germany is working flagrantly and in the open.

Her specific plan has been made clear. She hopes to organize Russia into a succession of little republics, each bound to herself by an organic treaty, and each subtly egged into a sullen enmity against the other dinky little republics.

It cannot be denied that the scheme is devilish in its cleverness. The kaiser takes advantage of the fact that the Entente Allies are fighting for the right of self-determination of small nations. Therefore he hatches out a republic in Finland and another in Poland, etc., and asks the Entente, "What! Would you force this poor little country to go back into the grip of tyrannical Russia!" Meantime he maneuvers to control the aforesaid small nations by German agents.

Summing it up this is what is in the German mind at this juncture:

To hold fast on the west front until they have arranged for the monopoly of Russian commerce; then peace at any cost of western sacrifices. Then to wait for a chance to make another war. The first breach between the

The Cultivator Patterns

8964—Boy's Suit. Cut in sizes 2, 4 and 6 years. The blouse buttons at center front; the straight trousers are included in the pattern.

8931—Ladies' Slip on Waist. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. The model may be either gathered or tucked across the front and back at the slightly rounded neck.

8944—Infant's Coat and Cap. Cut in one size. The outfit consists of a coat and close-fitting cap.

8959—Ladies' One Piece Apron. Cut in sizes 36, 40 and 44 inches bust measure. The apron is belted in at the normal waist-line with a belt of the material.

8933—Ladies' and Misses' Dress. Cut in sizes 16 and 18 years, and 36, 38, 40 and 42 inches bust measure. A simple design which carries out the idea of combining materials in a new way is shown in this number.

8956—Girls' and Juniors' One Piece Apron. Cut in sizes 8, 10, 12, 14 and 16 years. The apron is very simple to make as it is all in one piece.

8934—Ladies' Skirt. Cut in sizes 24, 26 and 28 inches waist measure. The lower edge of the skirt is straight, and the closing is at the left side front under a tuck.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

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Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

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Los Angeles.

nations now composing the Entente will be the signal for the next war.

"They got together and licked me this time," snarls the kaiser. "Next time I will see to it that they do not ge together."

That is what is in the minds of the German military caste.

What should be in our minds is to see to it that there shall be no German military caste left to carry out this plot.—L. A. Times.

Food

SWEETEN UP WITH SORGHUM

SORGHUM is not like molasses, a sugar-house by-product, but an unmixed syrup made directly from sorghum cane by crushing and boiling. The grade and color of the syrup will depend on the making. If the syrup is allowed to caramel or burn on the side of the pan, a dark, strong syrup will result. Lime is used by some makers to overcome the acidity of the raw juice. Where this has not been done in the making, housekeepers frequently heat the syrup with a pinch of soda before using it.

When a well-made, light syrup has been produced the next point is to prevent fermentation, for, after all the tang of sorghum syrup is mostly due to fermentation. Syrup that has been thoroughly sterilized by boiling will not ferment if poured hot into sterilized containers and sealed immediately. The tin quart can is the most convenient container for family use. Store in a cool place and you have a good all-winter table syrup and a fair substitute for sugar in desserts and jam making. When recipes call for sugar use half and half sorghum and corn syrup or sorghum and sugar or use sorghum alone.

Sorghum for Jam

Canned fruit pulp or stewed dried fruit may be converted into jam or butter whenever the sorghum syrup is available. Allow one cup of sorghum to four cups of fruit pulp. Season with spices, ginger or lemon, cook to a jam, refill sterilized jars, process and seal. Crushed peach kernel will add flavor to peach butter.

Sweet Pickled Beets

One-half gallon baby beets, three cups vinegar, one-half teaspoon salt, three cups sorghum, three tablespoons mixed pickled spices.

Boil together for three minutes, vinegar, sorghum, salt and spices. Cook beets until tender, skin and pack in one-half gallon jar. Pour boiling liquid over them filling jars. Fasten covers on tightly and store in dark place to cool. Canned beets may be used for this recipe. Pears and peaches may be pickled with sorghum syrup and it is especially good with spiced grapes.

Sorghum Lemon Sauce

Two cups sorghum, one cup boiling water, two teaspoons cornstarch, juice two lemons, grated rind one lemon, two tablesoons butter (added before removing from fire).

Sorghum Cake

One-half cup fat, one and one-half cup sorghum, one cup boiling water, one-quarter teaspoon salt, one teaspoon ginger, one cup flour, one cup substitute flour, two eggs, one teaspoon soda.

Cream the fat, and add the sorghum, and the boiling water. Add the sifted dry ingredients to the first mixture. Add the eggs last. Bake the cake in a loaf or in a shallow pan in a moderate oven.

Apple Sauce Variation. To two cups of apple sauce, cooked until very thick, add one tablespoon butter, three tablespoons of syrup, and cinnamon as desired. Spread the apple sauce one-half inch thick over the bottom of the pan. Pour the cake batter over the sauce, and bake it in a moderate over. When the cake is done, turn it out of the pan so that the apple sauce is on top. Cut it in squares, and serve warm.

War Cake

Two-thirds cup shortening, one and one-half cups sorghum, one and one-half cups water, one cup dates, raisins or prunes, one teaspoon salt, two teaspoons cinnamon, one teaspoon cloves, four cups flour, two teaspoons baking powder, three-quarters cup nut meats (if desired), one teaspoon soda dissolved in two tablespoons hot water, one-half teaspoon nutmeg.

Mix shortening, water, syrup, spices and raisins and boil for about three minutes. Pour into mixing bowl and allow to cool. Sift flour and baking powder, add all at one time to the liquid mixture, beat well, add nuts if desired, and, just before pouring into oiled and floured pans, dissolve the soda in the hot water and beat into the batter. Bake in loaf pan in moderate oven about an hour.

Sorghum Pie

Two cups sorghum, one tablespoon butter, four eggs, pinch of salt.

Boil syrup and butter together, pour over eggs beaten with salt, stirring briskly. Have pie pans ready lined with crust. Pour in and bake. Chopped nuts sprinkled over the pie after baking add the finishing touch to this pie. This quantity will make two pies.

TYPEWRITER SATISFACTORY

"How do you like your typewriter?" asked a salesman of one of his customers.

"It's most satisfactory!" was the reply. "I wonder how I ever got along without it!"

"That's fine! Would you be willing to give me a little testimonial to that effect?"

"Why, certainly I will," and according to Everybody's Magazine, he pounded out the following:

"after Using thee automatig Back action atype writ, er for thre emonths $an d Over. I unhesittatinggly pronounce it prno nce it to be al ad even more than thee Manufacturs claim? for it. During the time been in our possessio e. i. th ree monthz! id has more th an paid for it$self. in the Saveing oF time an d labrr?' John 1 Snith."—Youth's Companion.

SLIGHT DISTINCTION

"But, my dear madam," said the admiral, "it is hard to discuss these matters with one so unfamiliar with the terminology of the subject. You remind me of the young wife who was speaking to her brother about her volunteer husband:

"'Isn't Jack just wonderful?' she said. 'He's already been promoted to field marshal.'

"'From private to field marshal in two months? Impossible!' said the brother.

"'Did I say field marshal?' murmured the young wife. 'Well, perhaps it's court-martial. I know it's one or the other.'"—Youth's Companion.

"Hurrah! I hear the reveille—
I love to hear it summon me;
I love to get up mornings, too;
I do, I do—like hellidoo!"

JOHN L. ON THE HUN

Shortly before his death John L. Sullivan had something to say about the Hun. "We're goin' to get that bird," he said, "we're goin' to get him sure. An' I'll tell you why I know. Because he got mad so quick. All that hate stuff, I mean. In the fightin' ring, when you see a man begin to boil up an' see red in the first round, you know that next thing he won't be able to see at all. What's my best words to the boys in camp? Just this: Tell 'em they can't go wrong if they keep their feet warm an' their heads cool, their eyes open an' their mouth shut."

CAT NEEDED TUNING

The landlady bustled up to her new lodger as he came down to breakfast the first morning.

"Good morning, sir," she wheezed.

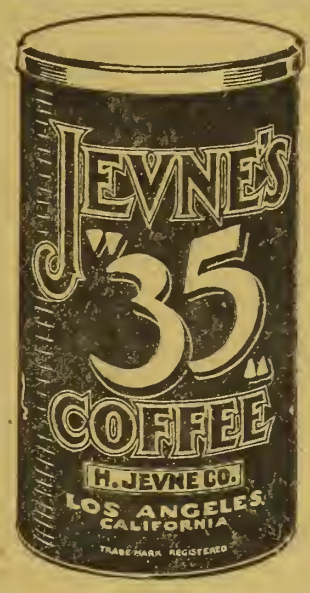
"Good morning," said the lodger.

"I hope you've had a good night's rest," said the landlady.

"No," said the mild mannered little man. "Your cat kept me awake."

"Oh," said the landlady, tossing her head. "I suppose you're going to ask me to have the poor thing killed."

"No, not exactly," said the gentle lodger. "But would you very much mind having it tuned?"



Just say "thirty-five" to the grocer

-sold Everywhere

—the test is in the cup

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LOS ANGELES

A Continuous Chain of Boiling Points

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STANDARD OIL COMPANY (California)

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The Gasoline of Quality

If your subscription to this paper is soon to expire, fill out the attached blank enclosing check, money order or stamps for $1.00 and send to California Cultivator.

California Cultivator Subscription Blank

California Cultivator, Los Angeles,
115-117 North Broadway.

Gentlemen:—Please find enclosed $1.00 for which send California Cultivator for one year (new) (renewal) to the address below.

My Name .....

Post Office .....

State ..... Street Number or R. F. D. .....

Los Angeles Market

Los Angeles, August 28, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.
Cal. Extra. Creamery 50

Dairy Exchange price past week on extras.

Aug.	21	22	23	24	26	27
'18 ...	50	..	50	..	50	50

Rcts. wk. ending August 27, 84,300 lbs.

CHEESE

Brokers' prices:
California fresh, lb. 28
Eastern Daisies 29
Oregon triplets .....28@28½

EGGS

Exchange quotations. Prices to retailers 2 to 3 cents higher.
Fresh extras 55
Case Count 50
Pullets 48

Dairy Exchange prices past week on fresh extras.

Aug.	21	22	23	24	26	27
'18 ...	53	..	53	..	53	55

Rcts. wk. ending August 27, 368 cases.

POULTRY

We quote to producers.
Broilers 33
Fryers 29
Hens, small, 20@22; heavy 25
Colored 25
Ducks, lb., 20; ducklings .....22@25
Roasters 29
Roosters, old 17
Turkeys .....28@33
Geese 15
Belgian Hares 16
Squabs .....30@35

LIVESTOCK

We quote cwt. f. o. b. L. A.
Corrected Wednesday morning, August 28, by the Cudahy Company.
Cattle—
Beef steers, av. 1000-1100 lbs. 12.00
Heifers, good 9.00
Cows, good 8.50
Veal Calves 10.00
Canners .....5.00@6.00
Hogs —
Av. 150 lbs. 17.50
Av. 175-225 lbs. 18.50
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers 12.50
Ewes 11.50
Lambs 16.00
Yearlings .....11.00@11.50

POTATOES

Wholesale selling prices:
White Rose, lug .....1.00@1.25
Sweet, lug .....1.25@1.35

ONIONS

Wholesale selling price, cwt.:
Australian Brown, cwt. .....2.50@2.60
Silverskin .....2.85@3.00
White Globe .....2.50@2.75

VEGETABLES

Wholesale prices:
Beans—Wax, lb. 8
String .....11@12
Limas, lb. .....5@6
Beets, sk. 2.00
Cabbage, cr. 4.00
Carrots, doz. .....35@40
Corn, sugar, lug .....85@90
Cucumbers, lug. .....45@55
Egg Plant, lug .....90@1.00
Horseradish, lb. 15
Lettuce, cr. .....80@90
Leeks 35
Mint, doz. 40
Okra, lb 12
Onions, green, doz. .....25@30
Peas, Tel., lb. .....13@14
Peppers, Chili, bx., 40@50; Bell, lug 34@40
Parsley, doz. 20
Radish, doz. 30
Rhubarb, C. W. bx., 1.15; Strawberry 1.30
Spinach, doz. 30
Squash — Summer, lug .....45@55
Hubbard, lb. .....2½@3
Crookneck, lug .....60@65
Tomatoes, lug .....75@85
Turnips, doz. 40
Watercress, doz. .....35@40

FRUITS

Wholesale prices:
Apples—W. Astrachan, bx 1.85
Gravenstein .....1.85@2.75
Bellefleurs, bx. .....2.25@2.50
Cantaloupes — Jumbo pack, Tip Tops, best, 1.50; Paul Rose, 1.25@1.50; Tip Tops and Pineapples in cabbage crates, 3.00@3.25; White Rinds, cabbage crates, 2.75@3.00; Casabas, cabbage crates, 2.50 @3.00.
Crabapples, lug .....1.35@1.40
Figs, lb., Black, 8; White .....7@8
Grapes—Lb.: Malagas, 3; Muscats, 2½@3; Rose of Peru, 3; Liberty, 3½; Tokays, 5@6 4-basket crates; Concords, 1.50.
Nectarines, lb. .....5@6
Peaches—Elbertas, lugs, 1.00@1.15; poorer, 75@1.00; Strawberry, large fancy, 1.75 @2.00 per lug; Hales, large, 1.75 per lug.
Strawberry, lug .....1.50@1.25
Pears, Bartletts, lb. .....5@6
Plums—Satsumas, 6@7; French prunes, 5@6; Kelsey, 5@6 lb.; Santa Rosa, 7; Hungarians, 6.
Watermelons, lb. .....½@1½

CITRUS

Lemons, packed, 6.50@6.75; loose 3.75@4.00
Oranges — Valencias .....7.75@8.50
Grapefruit .....5.00@5.50

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....18@20
Amber extracted 16
Fancy white comb, per case 6.50
Comb lt. amber, per case .....5.00@6.00
Beeswax, lb. .....32@34

HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A.:
Tame Oat .....25.00@27.00
Volunteer Oat .....12.00@14.00
Wheat .....22.00@25.00
Barley .....22.00@25.00
Alfalfa .....18.00@21.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS

See San Francisco market.

San Francisco Markets

San Francisco, August 27, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:
Extras 53
Prime firsts 51
Firsts 49

Prices Extras past week and year ago:

Aug.	20	21	22	23	24	26
'18 ...	..	52½	53½	53½	52½	53
'17 ...	..	41½	41½	41½	42	..

Rcts. wk. ending August 26, 277,700 lbs.

CHEESE

Dairy Exchange quotations:
Cal. Flats 31
Cal. Y. Amer. 30
Ore. Y. Am. 27½
Jack Cheese, full cream 28

EGGS

Dairy Exchange quotations:
Extras 59½
Selected Pullets 54

Prices Extras past week and year ago:

Aug.	20	21	22	23	24	26
'18 ...	..	57½	58½	58½	59½	59½
'17 ...	..	43½	43	43½	43½	..

Rcts. wk. ending August 26, 6503 cases.

POULTRY

We quote to producers, lb.:
Per lb.: Large hens, 22@24; Leghorn hens, 27@30; broilers and fryers, ¾ to 1¼ lbs., 43; 1½ lbs., 38@40; 2 lbs., 38; 3 lbs. and over, 35@36; old roosters, 20@21.
Ducks, live, 26@28.
Geese, 25.
Belgian hares, live, 15-17.
Squabs, doz., 3.50@4.00.

LIVESTOCK

Prices gross weight:

Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.

Steers, lb., 9@11½; thin, 7½@8½; cows and heifers, 6@8; thin, 3½@5½; calves, 8@11.

Sheep—Per lb. gross weight; Unshorn wethers, 11@11½; ewes, 8½@9½; lambs, yearlings, 12@12½; milk, 12@14½.

Hogs—Hard grain fed, weighing 100 to 140 lbs., 17¼; 140 to 300 lbs., 17¾; 300 to 400 lbs., 17¼.

POTATOES

Wholesale selling prices at wharf, cwt.:
River, new, cwt. .....2.50@2.65
Sweets, lb. .....4@4½

ONIONS

Wholesale selling price on wharf, cwt.:
Australian .....1.65@1.85
White, lb. .....3½@5
Garlic, new, lb. .....12½@15

VEGETABLES

Wholesale selling price:
Beans, String, lb. .....4@6
Limas, lb. .....5@6
Corn, green, sk .....2.00@2.75
Cucumbers, lug .....75@1.00
Pickling, lb. .....4@6
Egg Plant, lug .....65@75
Lettuce, doz. .....15@20
Okra, lb. .....9@10
Onions, green, bx. .....65@75
Peppers, Bell, lug, 50@65; Chili .....50@65
Peas, lb. .....8@9
Squash — Summer, lug .....50@75
Tomatoes, lug .....1.00@1.25

FRESH FRUITS

Apples — Gravenstein .....1.25@2.50
Bellefleur .....1.25@1.75
Avocados, doz. 2.50
Bananas, lb. .....7@7½
Berries — Ch.: Strawberries, 7.00; blackberries; 5.50@7.00; raspberries, 10.00@14.00.
Cantaloupes — Turlock ponies, 50@75; standard, 75@1.00; flats, 35@40; Persians, cr., 3 to 5, 1.00@1.25; river, lug, 75@1.00.
Crabapples, small bx. .....50@60
Fig, bx.: Sonoma, double layer .....1.00@1.25
Grapes, Seedless, cr. .....50@1.00
Black Prince .....75@1.00
Malaga .....75@1.00
Tokay .....1.00@1.25
Nectarines, cr. .....1.00@1.75
Peaches, bx. .....60@1.00
Pears, Bartlett, bx. .....1.50@2.50
Plums — Cr.: Burbank, Satsuma, 1.00@1.10; Gros, Kelsey, Japan, Grand Duke, Diamond and Hungarian, 1.00@1.50; fy., 1.75.
Pineapples, doz. .....4.50@5.00
Watermelon, lb. .....1¼@1½

CITRUS

Lemons, bx. fy., 4.00@6.50; lemonettes, 3.00@4.00; oranges, 7.00@8.00; grapefruit, 4.00@6.00.

DRIED FRUITS

Raisins: Associated prices 1918 are:

Muscats: Packages seeded, fancy, 36-16s, 9.625; fancy, 48-12s, 7.75; choice, 36-16s, 9.125; choice, 48-12s, 7.375. Bulk seeded: 25-lb. Bakers, 8.00; 25-lb. fancy, 8.85.

Thompson Seedless; packages recleaned, 48-16s to case, 9.90; bulk, recleaned, 36-12s to case, 8.00; package, recleaned, 25-lb. boxes, 9.25. Sulphur bleached — northern stock: Bulk, 25-lb. boxes, choice, 10¼; bulk, 25-lb. boxes, fancy, 10¾; bulk, 25-lb. boxes, extra fancy, 11¼. Soda dipped — northern stock — Bulk, 25-lb. boxes, 10.

Loose: 1-crown, 25 lb. boxes, 8½; 2-crown, 25 lb. boxes, 7½; 3-crown, 25 lb. boxes, 8; 4-crown, 25 lb. boxes, 8¾.

Layers: 3-crown, 20 lb. boxes, 1.85; 3-crown, 20 1-lb. trays to box, 2.00; 4-crown, 20 lb. boxes, 2.10; 6-crown, 20 lb. boxes, 2.95; 3-crown, 10 lb. boxes, 1.05; 4-crown, 10 lb. boxes, 1.20; 6-crown, 10 lb. boxes, 1.65; 3-crown, 5 lb. boxes, .65; 4-crown, 5 lb. boxes, .70; 6-crown, 5 lb. boxes, .90.

Sun-Maid clusters, 20 1-lb. cartons to box, 2.35.

Imperials, 4 5-lb. cartons to box, 3.40.

Vineyard run, 50 lb. boxes, 3.90; 100 lb. boxes, 7.50.

Suitanas. Packages, recleaned, 48-16s to case, 9.65; bulk, recleaned, 25-lb. boxes, 9.00.

Peaches — California Peach Growers quotes opening prices for 1918 crop f. o. b. factories California. Prices guaranteed to December 31.

Bulk basis and boxes unfaced 1 and 2 cents more.

	Practically Peeled	Yellows (Old style)	Muirs (Old style)
Standard	12⅞c	11¼c	11⅜c
Choice	13⅜c	11⅜c	11⅞c
Fancy	14⅜c	12½c	12⅞c
Ex. Fancy	15½c	13¼c	14c
Slabs		10¼c	

Prunes and Apricots. The Prune and Apricot Growers' Association have named following prices on apricots:
Standards 9½
Choice 13
Extra Choice 14½
Fancy 16
Extra Fancy 17½
Extra Moorparks 19
Slabs 11

Cash on delivery price on all grades will be 8 cents with the exception of standards and slabs on which it will be 6 cents.

Prunes: The government will take all the 50-60; 60-70; 70-80 sizes. The quotations sent to the trade last night are as follows:

The bulk prices will be:

Sizes:	Price per lb.
20-30	17
30-40	10¾
40-50	10
50-60	9
60-70	9
70-80	8¾
80-90	8¼
90-100	7¾
100-120	4¾
Above 120	4¼

One cent per pound, and one and one-fourth cents per pound will be added for 50 and 25-lb. boxes.

BEANS

Jobbers' prices, cwt., recleaned:
Limas .....13.10@13.25
Bayous .....7.75@7.90
Small Whites .....Nominal
Large Whites .....Nominal
Mexican Reds .....7.75@7.90
Blackeyes .....6.75@7.00
Pinks .....7.00@7.15
Red Kidney .....Nominal
Cranberry .....Nominal
Teparies .....8.00@8.25

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....17@20
Amber extracted 16
White comb, cs. .....4.50@6.00
Light amber comb, cs. .....3.50@4.00
Beeswax .....32@34

HAY

Under date of August 24, Scott, Magner & Miller says:

Receipts past week, 2067 tons. The government placed orders during the week for their September requirements, most of which will be furnished by San Francisco dealers.

Alfalfa is arriving freely,—that from the river districts being of exceptionally fine quality.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market — for prices to consumers charges of cartage, commission and handling must be added according to conditions:

Fancy Wheat Hay
(large 5 wire bale) .....26.00@27.00
No. 1 Wheat or Wheat and Oat Hay .....23.00@25.00
No. 2 Wheat or Wheat and Oat Hay .....20.00@22.00
Choice Tame Oat Hay .....24.00@26.00
Other Tame Oat Hay .....21.00@23.00
Wild Oat Hay .....19.00@23.00
Barley Hay .....19.00@23.00
Alfalfa, first cutting .....16.00@20.00
Alfalfa, second cutting .....22.00@24.00
Stock Hay .....18.00@21.00
No. 1 Barley Straw, bale .....50@80

GRAIN AND FEED STUFFS

Wheat—Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard white—	Per cental.
No. 1	3.66⅝
No. 2	3.61⅝
No. 3	3.55
Soft white—	
No. 1	3.63⅝
No. 2	3.58 1-3
No. 3	3.51 2-3
Club and Sonora—	
No. 1	3.60
No. 2	3.55
No. 3	3.48 1-3

For sacked grain add 9 cents per bushel of 60 pounds to above prices. Deduction of three-fourths of a pound is made for weight of standard grain bag. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to its merit.

Barley — No. 1 feed, 2.37½@2.45 per cental; milling, 2.55@2.60.

Oats — Red feed, 2.55@2.65 per cental for ordinary and 2.75@2.85 for choice; seed do, 2.90@3.10, with recleaned at 3.20 @3.40; black, 2.50@2.65 for feed and 3.00 @3.25 for seed; do, recleaned, 3.50@3.75.

SEEDS

Prices in round lots, lb.:
Millet, recleaned .....5@5½
Flax .....8@8½
Hemp .....5½@6
Rape .....2½@5

Citrus Fruit Market

Los Angeles, August 28, 1918.

Both lemon and orange market are exceptionally strong. Sales quickly made at long prices.

Shipments

Shipments of citrus fruits to date since November 1, 1917: Southern California; oranges 13,167 cars, lemons 5154, total 18,321. To same date last season, oranges 36,899, lemons, 7297, total 44,196. Central California this season; oranges 2536, lemons 115, total 1650. Last season to same date; oranges 4665, lemons 164, total 4819. Northern California; oranges 203, last year same date 845.

AT THE AUCTIONS

August 21

New York: 10 oranges, 3 lemons, 1 grapefruit. Val. 6.45-10.05, lem. 6.30-7.65, grapefruit halves 1.70-2.75.

Pittsburg: 1 oranges, 2 lemons. Val. 5.25-7.70, grapefruit 1.35, lem. 4.55-6.45.

St. Louis: 1 lemon 4.75-6.05.

Boston: 2 oranges, 3 lemons and grapefruit. Val. 6.05-9.15, lem. 3.30-6.70, grapefruit 2.55-4.55.

Philadelphia: 2 Valencias, 1 lemon. Val. 6.15-8.80, lem, 7.40-7.85.

August 22

New York: 8 oranges; 2 lemons 1, grapefruit. Val. 5.45-9.40, lem. 6.85-7.65, 7.65, grapefruit halves 1.65-2.10.

St. Louis: 1 lem. 4.60-6.30.

Pittsburg: 1 lem. 2.95-5.65.

Boston: No sale, no arrival.

August 26

New York: 9 oranges, 4 lemons, 1 grapefruit. Val. 4.10-10.10, lem. 7.20-8.30, grapefruit halves .80-3.25.

Cleveland: 4 cars. Val. 8.55, lem. 3.75-5.70.

Boston: 1 Val. 3 lem. Val. 2.00-9.95, lem. 2.85-6.35.

August 27

New York: 7 oranges, 3 lem. Val. 5.10-9.80, lem. 7.50-8.45, grapefruit 5.30.

Boston: 3 cars. Val. 6.00-9.95, grapefruit halves, 1.50-1.55.

MARKET NOTES

The weather bureau notes intense heat and shortage of rain in the Ohio and central Mississippi Valleys. There has been little damage, however, in corn growing sections. Cotton and truck crops have suffered the worst.

California's late potatoes are coming up finely and a good crop is assured.

Arizona has been given some heavy rains and under new pasture live stock is improving in all sections.

Long staple cotton in the Yuma section has been seriously damaged by aphis.

California will produce 2,675,000 bushels of corn as against 2,400,000 last year.

California's production of wheat per acre this year falls short of that of last year, also of the average. The production this year will not average over 15 bushels. The 1917 average was not over 19.8 bushels, while that for the five years preceding was 16.4.

California's production of barley this year will total 34,220,000 bushels. Last year's production was 39,000,000 bushels.

Tomato prices made by canneries of California have been attractive and the shipment of fresh tomatoes has not been as heavy as former years.

This state's production of Mexican and California red peppers and pimientoes has increased 100 per cent over that of a year ago.

Colorado reports that she will market this year an immense crop of Honey Dew melons, one shipping point, Ordway, promises over 400 cars.

Oregon's production of onion sets will not be over 40 per cent of normal.

Tomato fields in Alameda, Sonoma, and Santa Clara Counties show considerable damage from disease and shortage of water.

Santa Clara County's crop of pickling cucumbers is short this year in both acreage and yield.

Heavy movement of onions, brown, yellow, and whites, is now beginnig in Central California. The labor situation is serious but transportation is better than last year.

Shipments of melons from the Turlock section have been reduced by cool weather. No more loss from car shortage.

Veal calves last week in the Los Angeles market commanded as high as $20.

Estimates now are that California's peach crop will be 75 per cent of normal. Because of high prices for the fresh fruit a larger percentage is being marketed in that way than before.

Idaho has only 22 per cent of her peach crop this year. She will ship out less than 100 cars.

Practically all Eastern eggs which have been in storage in San Francisco have been moved out, clearing the market for locals.

State Food Administrator Merritt has appointed a committee to investigate the two cent increase in price of milk asked by the California Milk Producers' Association.

Both local and Eastern markets for cantaloupes have weakened the past week.

PARTIAL LIST CALIFORNIA FRUIT AND VEGETABLE SHIPMENTS

From post card reports to the Los Angeles branch of the bureau of markets, report is made of the following shipment of cars of products from California for the week ending August 26: Apples, 17; apricots, 1; berries, 7; cabbage, 6; cantaloupes, 100; carrots, 3; casabas, 8; dried

apricots, 22; dried beans, 43; dried peaches, 1; dried figs, 1; dried prunes, 14; grapes, 663; lettuce, 10; mixed fruit, 54; mixed vegetables, 29; mixed fruit and vegetables, 37; mixed dried, 1; onions, 65; peaches, 332; pears, 390; peppers, 11; plums, 127; potatoes, 165; quinces, 1; raisins, 156; sweet potatoes, 1; tomatoes, 47; watermelons, 63.

From post card reports to the Los Angeles branch of the bureau of markets, report is made of the following shipment of cars of products from California for the week ending August 19: Apples, 20; berries, 6; cabbage, 6; cantaloupes, 171; casabas, 8; dried apricots, 30; dried beans, 35; dried peaches, 1; dried peas, 1; dried prunes, 12; garlic, 4; grapes, 480; lettuce, 8; mixed fruit, 119; mixed vegetables, 54; mixed fruit and vegetables, 19; mixed dried fruit, 3; onions, 60; peaches, 434; pears, 388; peppers, 1; plums, 164; potatoes, 178; quinces, 1; raisins, 137; tomatoes, 25; watermelons, 112; Arizona peaches, 1; Mexican watermelons, 2; New Mexico. Cabbage, 4; peads, 9; potatoes, 2; watermelons, 3.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Unsigned communications receive no attention.

Pigs Dying

Have been raising hogs three years with very good success until war conditions made it impossible to get the kind of feed I want. Now I lose pigs frequently from no apparent cause. Opened one after it died and it seemed to be in good order unless the liver may have been a little too large. They have plenty of so called hog feed, charcoal, salt, tankage and green beets. They have good quarters; thoroughly cleaned and disinfected. There are no signs of cholera. Please advise through the Cultivator.—Subscriber, Buena Park.

It is hard to decide what is wrong with the pigs. Would advise letting them run on pasture even if it be only a small one. Put the lot in alfalfa if possible or give some alfalfa hay to bulk up the feed. Do not give too much salt and once or twice a week add some baking soda to the feed. It sweetens the stomach and aids digestion.

Bloody Milk

I have a cow that is a very rich milker but lately one of the teats seems to be affected as there appear clots of blood when milking. Otherwise the cow seems to be in good health. Would like to know if this would affect the milk in the other quarters, as I have several customers for the milk. Would it affect the rest of the udder? What is the cause and what is the remedy?—Subscriber, Burbank.

The bloody milk is probably caused by a bruise on the udder. Those troubles usually amount to very little if properly cared for but if neglected the inflammation might spread and involve the other quarters also. It would not affect the milk in the other quarters unless the inflammation extended to them. Rub the quarter carefully with the hands and be sure to milk it out clean. Also give some salts to thin the blood. Mix three pounds of epsom salts and one and a half pounds of common salt and give a large handful of the mixture in the feed once a day or if the cow refuses it in the feed then dissolve it in a quart of hot water and when cool give it as a drench.

Book Review

PROGRESSIVE SHEEP RAISING

Armour's Bureau of Research and Economics, Chicago, offers to send without cost "Progressive Sheep Raising," by R. H. Deloach. It is a 60 page booklet, a little more than pocket size, with illustrations of practically all breeds of sheep, methods of handling mutton, and in addition a number of drawings of feeding racks and labor saving appliances which will be of interest to sheep raisers.

Send our boys the fuel, and they will supply the steam.

CALIFORNIA CATTLE SITUATION

By D. J. Stollery

Plans with reference to the organization of the cattlemen of the state are proceeding apace, and within two months meetings will be held throughout the five zones in order to ratify a constitution and by-laws and proceed to the election of directors. It will not be amiss to briefly review the suggested method of organization. The state will be subdivided into five zones, the Northern, Sacramento, San Joaquin, Western and Southern. Delegates from the county associations within a given zone will meet in a zone convention and there elect five representatives from that particular zone to act on the board of directors of the central organization. This will, therefore, create a directorate of 25, and will result in complete representation of the entire state. It is possible that an active manager will be appointed for each zone who will devote his whole time to association affairs.

Particular stress must be laid on the necessity for organization. Events of the past few years have shown that important as is the live stock industry of this state, it is practically impossible to secure intelligent data, while in the amelioration of any problems the solution of these has been heretofore a purely local matter. With the combined efforts of the "brains of the cattlemen," the scope of the industry can and will be greatly strengthened.

One of the first matters with which the organization will deal is the taking of a census of beef cattle throughout the state, also suggestions from the cattlemen as to what shall be done in enforcing the provisions of the "Hide & Brand Bill" relative to inspection of cattle shipped or slaughtered. The suggestion has been made that responsible cattlemen be appointed inspectors, and in view of their practical knowledge this is a most logical method.

Feed conditions within the state this year are, of course, serious, and our troubles are by no means over. A review of conditions in the state bordering on California indicates a similar shortage of feed, and the only state with any surplus feed, of which we have knowledge, is Nebraska. The necessity for conservation of feed stuffs and their increased production is becoming more and more apparent and the interchange of ideas which organization will bring, will greatly benefit the cattlemen of the state at large.

A meeting of cattlemen from Zone No. 2, which is the Sacramento district, will be held at the Traveler's Hotel, Sacramento, on Thursday morning, September 5, at 10 a. m., and a cordial invitation is extended to all cattlemen throughout the state to attend this meeting.

BEEF CATTLE AT THE FAIR

The beef cattle showing at the state fair promises to be better than ever before. In the Shorthorn class the following will be well represented: W. M. Carruthers of Live Oak, Hopland Stock Farm, Pacheco Cattle Company of Hollister, and the Gibson Company of Woodland.

The Herefords will be shown by J. A. Bunting, W. D. Duke, John Simpson, and others. The University of Nevada will compete with a small herd. Old time breeders will welcome the return of this university.

The Aberdeen-Angus herd of Yakima, Washington, will show this year. It is a particularly good herd and the California breeders are anxious to see it.

TRACTOR TENTS AT STATE FAIR

One of the best features of the state fair will be the exhibit of the California Tractor and Implement Association. It will be in two big tents and will occupy a space of over 44,000 square feet. Last year one tent was enough with a space of 16,000. That was thought large at the time, and it was for last year. But this is 1918, and great things are expected of everybody and everything.

There will be 69 tractors of the wheel and track laying types, including the old familiar models and some real new ones that are just being put on the market. And accompanying this exhibit will be plows of all kinds and sizes, scrapers that follow the big tractors, threshers, binders, silo fillers, etc.

The exhibit will be what is known as a "still exhibit," that is there will be no actual demonstration as to what the tractors can do in the field or about the farm. But in many ways that is a much more satisfactory exhibit than the demonstration for it allows the prospective purchaser to examine the mechanism very closely, and learn some of the special features of the various tractors.

The following is the list of entries for the tractor display:

Bean Spray Pump Company, San Jose, tracklayers; C. L. Best Gas Traction Company, San Leandro, tracklayers; Douglas Boswell, Sacramento, tracklayers; Butler-Vietch Company, Berkeley, wheel tractors; California Moline Plow Company, San Francisco, wheel tractors; J. I. Case Threshing Machine Company, Racine, Wisconsin, wheel tractors; Dauch Manufacturing Company, Sandusky, Ohio, wheel tractors; John Deere Plow Company, San Francisco, wheel tractors; De Laval Dairy Supply Company, San Francisco, wheel tractors; Hamilton & Nickell, Sacramento, tracklayers; International Harvester Company, San Francisco, wheel tractors; F. H. Poss Company, San Francisco, wheel tractors; Sacramento Valley Tractor Company, Sacramento, tracklayers; Sampson Sieve-Grip Company, Stockton, wheel tractors; F. H. Stow Company, Berkeley, tracklayers; Yuba Manufacturing Company, Marysville, tracklayers; California Tractor Company, Stockton, tracklayers; Power Farming Company, Sacramento, wheel tractors; H. V. Carter Company, San Francisco, wheel tractors; Averill Machine Company, San Jose, wheel tractors; Holt Manufacturing Company, Stockton, tracklayers.

WEATHER CONDITIONS

San Francisco, Cal., August 24, 1918.

Stations	Rainfall Wk.	Rainfall Season.	Rainfall Norm.	Temp. Max.	Temp. Min.
Eureka	.00	.42	.15	66	50
Red Bluff	.00	.12	.00	106	60
Sacramento	.00	.00	.00	102	54
San Francisco	.00	.00	.01	72	53
San Jose	.00	.00	.03	92	48
Fresno	.00	.00	.00	104	56
San Luis Obispo	.00	.01	.03	80	50
Los Angeles	.00	.11	.00	82	58
San Diego	.00	.03	.00	74	60

FAIR DATES

California State, Sacramento, August 31-September 8, Secretary Geo. B. Keefe

Glenn County Livestock and Agricultural, Orland, September 16-21, Secretary E. A. Falk.

Kings County, Hanford, September 23-28, Secretary E. Grayatt.

Ventura County, Ventura, September 30-October 5.

Fresno County, Fresno, October 1-5, Secretary C. G. Eberhart.

Southern California, Riverside, October 8-12, Secretary R. L. Taber.

Napa County, Napa, October 10-12, Secretary, E. P. Locharrine.

Sonoma County, Santa Rosa, October 10-12, County Farm Bureau in charge.

California Liberty, Exposition Park, Los Angeles, October 12-26, Secretary F. B. Davison.

Hemet District, Hemet, October 14-19.

California International Livestock Show, San Francisco, November 2-9, Manager Jos. E. Painter.

OTHER STATES

Spokane Interstate, Spokane, September 2-7, Secretary W. L. Tennant.

Vancouver, Vancouver, B. C., August 19-24, Secretary H. S. Rolston.

Southwest Washington, Chehalis, August 26-30, Secretary G. R. Walker.

Montana State, Helena, September 9-14, Secretary R. S. Skinner.

Washington State, Yakima, September 16-21, Secretary Frank Meredith.

Roundup, Pendleton, Oregon, September 19-21.

Colorado State, Pueblo, September 23-28, Secretary J. L. Beaman.

Gem State, Boise, Idaho, September 23-28, Secretary O. P. Hendershot.

Oregon State, Salem, September 23-28, Secretary A. H. Lea.

Utah State, Salt Lake City, September 28-October 5, Secretary Earl J. Glade.

Twin Falls, Filer, Idaho, October 1-4.

State Fair of Texas, Dallas, October 15-27, Secretary W. H. Stratton.

Northwest Livestock Show, Lewiston, Idaho, November 7-16.

Arizona State, Phoenix, November 11-16, Secretary Cecil D. Boyce.

Pacific International Livestock Exposition, N. Portland, Oregon, November 18-23, Secretary W. H. Crawford.

International Livestock Exposition, Chicago, Illinois, November 30-December 7, Secretary B. H. Heide.

National Western Stock Show, Denver, Colorado, January 18-25. 1919, Secretary Fred P. Johnson.

Glorietta Stock Farm

WOODLAND, CALIFORNIA.

Registered Holsteins

A limited number of serviceable bulls and yearling heifers for sale.

KING DOLLAR GLORIETTA PONTIAC

is our herd sire. All our stock offered for sale is sired by Pietertje De Kol Alka Peterbaas. Write or come and see me.

MRS. W. C. CURTIS

WOODLAND, CAL.

A Little "Tank"—for Farm Work

The Cleveland Tractor is built on the same principle as the wonderful European battle "tanks."

It travels on its own tracks, laying them down and picking them up as it goes along.

This efficient type of construction makes the Cleveland *specially* valuable to farmers, as it enables them to work practically *anywhere*—over almost *any kind* of farm land.

They are being operated over gullies, ruts and ditches, through soft soil, wet clay, sand and gumbo—without sinking or floundering. *They do not pack the soil.*

They are working under and among small trees, close up to fence corners, on hillsides and over rough ground with much better results than can be obtained with horses or with any other type of tractor.

And they are working much *faster*.

Thousands of Cleveland Tractors are helping to increase the production of food demanded by war conditions.

The Cleveland, pulling two 14 inch bottoms—which it will do under average conditions—plows 3½ miles an hour—eight to ten acres a day. This is equal to the work of *three* men and *three* good three-horse teams.

The Cleveland steers by the power of its own engine; it requires but slight effort on the part of the driver. Only one man is required to operate it. 12 horsepower is developed at the drawbar and 20 horsepower at the pulley. It is a constant source of tractive and stationary power for twelve months in the year.

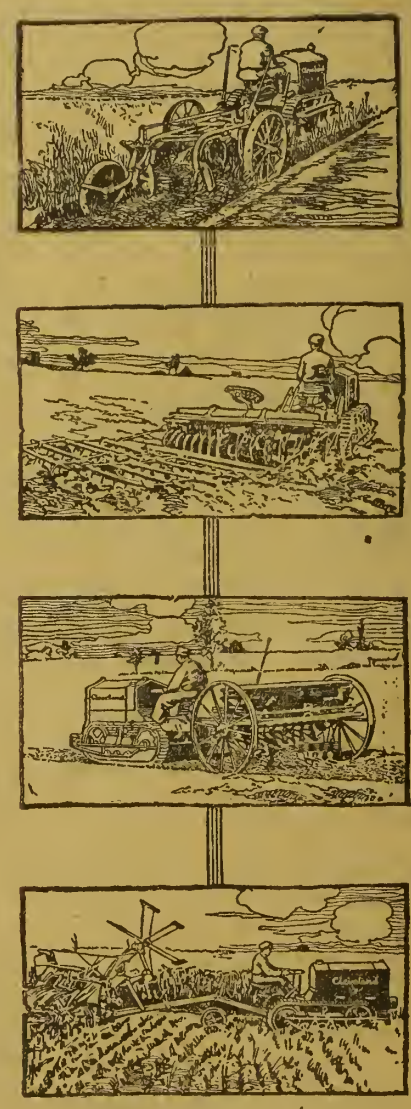
It plows, harrows, plants, reaps, cuts ensilage, runs saws and pumps, drags logs, pulls road machinery, hauls manure spreaders and does practically all the work formerly done with horses or stationary engines.

The Cleveland Tractor produces food but consumes none of it. It conserves man power, horse power, time, energy, and effort—and produces greater returns.

The Cleveland Tractor was designed by Rollin H. White, the well-known engineer. It is manufactured under his supervision. Gears and tracks are protected from dust and dirt. Materials throughout are of the best. The whole machine weighs only about 3200 pounds. It can be housed in less space than is needed for a horse.

Take advantage of present produce prices. Raise *more* food *now*. Help the nation and incidentally make more money yourself by using one or more Cleveland Tractors.

Write for complete information and the name of the nearest Cleveland dealer.



The Cleveland Tractor Co.

The largest producer of Crawler-type Tractors in the World

19077 Euclid Avenue **Cleveland, Ohio, U. S. A.**

Cleveland Tractor

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — September 7, 1918 — No. 10

Efficiency---War Efficiency---at the State Fair

ALL the world loves a lover and today California proved herself no exception. It is opening day at the fair—The State Fair. Sailors, soldiers and air service give the grounds a most military aspect.

In the middle of the afternoon 300 sailors from Mare Island were drilling. Their band of 75 pieces was playing, a squadron of airplanes maneuvered above and people cheered. The squadron broke up and its planes returned to their home at Mather Field a dozen miles away—all save one. He stayed and gave us a few thrills. The antecedent of "He" in that last sentence may be "airplane", but I venture the grandstand crowd was centering its eyes on the speck of animation a few feet back of the whizzing propeller and wondering if "he" would soon be overseas and dropping something on the head of Mr. Hohenzollern with sufficient force to convince him that one of these days American planes with Liberty motors will sail over Mittel Europa and drop dynamite or TNT on his throne and blow it to the other side of the Hellespont.

In any case Mr. Airplane man gave several nose dives, spirals, upside downs and other proofs of ability to dodge Hun "aces", then landed and was introduced to the crowd as Lieutenant George B. Gray of the aviation service. He received a hearty welcome—a cheer. The cheer increased to a roar and people stood and waved everything available a moment later when a girl slipped through the crowd and was given a resounding kiss. She may have been sister, sweetheart or wife, we knew not, but the human touch had been given and we cheered again.

The ponies jockeyed for position, the band played, but all eyes followed the couple up to the grandstand where mother was greeted and the crowd watched—not the races, but mother, lover and the other till it was time to go—when the plane sailed away after a few more thrillers and with a parting wave of the hand to—all of us.

Everything is war. The government exhibit is wonderful. The forestry service says "Stop the waste, put out the fires—for war." The food administration: "Produce more—save more—for war." The treasury: "Save, and give of your savings—for war." The war department: "Give your best—your very best blood—for war." The Red Cross: "Help us to save—from war."

The $300,000 Agricultural Building which was to have been dedicated is not yet a third done because its steel and the labor were needed for the machinery of war. One wing has been partially completed so that its ground floor and balcony hold a great number of county and other attractive exhibits, but its tile roof is not even yet in place, neither is any finish work done. The great rotunda has only a few of its monster steel uprights and girders in place while the north wing, or a half of the building, is only outlined by a wall a few feet above the foundation.

The live stock men gather in knots and discuss breeds, methods and live stock activities which may through greater efficiency add to the length of Uncle Sam's arm.

The schools are making a great educational exhibit. The big Machinery Hall has been transformed, at least as to the noise and oily smells which have always greeted us there, and manual arts with products of war gardens fill the building, cover the wall and occupy the large outside court where formerly spray pumps, plows, disks and farm implements generally were displayed, but now in tents a half mile away.

Next door is the poultry building with fowls of every type, including pigeons strutting their proudest to attract the eye of the judge, and of course every bird showing wherein its welfare is bound up in war success.

One restful feature this year is the appearance of more green on the ground. The infield, which heretofore has had as its only ornaments a barren field with at best a covering of dried foxtail, and other weeds, a half mile of track with two locomotives waiting the slaughter with a "head on" collision, is this year covered with waving alfalfa. Also a couple of hog houses have been moved from near the poultry building and the tract is now covered with alfalfa with the tents of the boys from the state school at Ione occupying one side and the field used as drill ground. It's a wonderful educational opportunity for those boys. When "off duty" live stock barns and machinery, tractor and implement tents are filled with the inquisitive youngsters asking few questions but using two eyes.

Speaking of implements and power farming appliances! There are three monster tents. I don't know how many square feet they cover, but it's a wonderfully complete exhibit. It's worth a week from every farmer who wants to know how to farm with employment of least labor. I haven't given it a week yet, in fact I walked in one tent and in about five minutes walked out of the far side of the third tent, but I "sensed" some fine lessons from those tractors and implements, and tomorrow the Cultivator camera will get busy and next week will tell more of real lessons than my pencil can.

Pleasure autos are hardly among those present. Their usual place at the left as one enters is now occupied mostly by motor trucks and accessories as is a still larger tent at the right. Efficiency, efficiency everywhere with minimizing of those things which make for pleasure.

Even Sacramento's principal streets, which usually almost hide the sky with streamers and bunting, show not one streamer. At night its lights which have heretofore chased each other all over the fronts of the buildings are now darkened.

(*Continued on Page* 235)

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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Saturday, Sept. 7, 1918

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

It's different this week. The illustration appears inside on Page 3. The editor and the boys are at the state fair and have just sent down a bit of a story as to how things look up there.

TRACTOR MEET CHANGES

Tractor men believe in tractors. But they didn't know how thoroughly everybody believes in tractors until entries and requests for larger space at the Los Angeles demonstration began to overflow the 350 acres provided on the Whittier Boulevard. This field staged a great demonstration last year; but it can't hold the actors in the 1918 event. So it has been necessary to change the location of the demonstration to a much larger tract on Wilshire Boulevard at La Brea. The dates remain as before, September 17-21.

IRRIGATE AFTER FRUITING

Many deciduous fruit growers are seeking the reason for no fruit setting. Whether it is due to insects, to improper pruning, to lack of water for the roots, or to other reason, is freely discussed. We want to call attention to the last factor mentioned. Many a fruit grower has the idea that once the fruit is off the tree, the tree is practically dormant and ready to enter into its period of rest. Such a grower should make a careful study of his tree. From this time until the dormant period properly begins, the tree is perfecting its various parts that they may function properly. One of the essentials of a heavy crop next year is that the buds shall be grown this fall. They cannot be grown with roots in bone dry soil.

ORGANIZE

Apricot growers had a very enlightening lesson this year. It's the same old lesson that began about the time the first apricot grew and, as usual, the grower is trying to figure out how much his loss is. One grower near Corona had some 20 acres of apricots—they were only medium sized, but he had reason to believe that he ought to receive for them not far from $100 per acre. He didn't. He did sell for about $200 for the entire 20. If he had been a member of a cooperative organization his loss would not have been so great. Even the association has not done as well this year as it has in some years, but it has been in position to take advantage of conditions so far as possible and is not confronting its members with disaster. It is too late to do any organizing or any work for this year's crop. It is, likewise, none too early to begin planning for next year's output. The grower who is waiting for the government to rush in and grab his fruit and pay long prices should cease to wait and begin to organize.

EIGHTEEN TO FORTY-FIVE

Thursday, September 12, is the day—second only in significance to that day in April, 1917, when the United States of America took up the burden of war against the Huns. On next Thursday the man power of the nation—from 18 to 45—will be solemnly laid upon the altar of service. The day of holding back, of waiting for "George to do it," is past. It is our war.

In his proclamation fixing the day for registration President Wilson says:

"Fifteen months ago the men of the country from 21 to 30 years of age were registered. Three months ago and again this month, those who had just reached the age of 21 were added. It now remains to include all men between the ages of 18 and 45. * * * We solemnly purpose a decisive victory of arms and deliberately to devote the larger part of the military man power of the nation to the accomplishment of that purpose. * * *

"Only a portion of those who register will be called upon to bear arms. Those who are not physically fit will be excused; those exempted by alien allegiance; those who should not be relieved of their present responsibilities; above all, those who cannot be spared from the civil and industrial tasks at home, upon which the success of our armies depends as much as upon the fighting at the front. But all must be registered in order that the selection for military service may be made intelligently and with full information."

MORE MILK

Every Californian should hear the lecture now being given on the Pacific Coast by Prof. McCullom of Johns Hopkins University, and making the present lecture tour by direction of the U. S. Food Administration.

Prof. McCullom gives a most convincing statement of the great need, or rather absolute necessity, for greater consumption of the products of the dairy. No people can be strong—no person can even live long—who does not make milk or its products or eggs a factor in the diet. A possible partial exception is in leafy vegetables such as spinach, lettuce, etc.

Since 1907 Prof. McCullom and other specialists have investigated and find that fats and proteids and other ingredients from olive oil, rich red meat and other substances and combined into a perfect substitute (so far as chemistry can accomplish it) of butter, of milk or of eggs, fail to long sustain life of animals used in the test, and persons fed exclusively on such diet with cereals have prematurely aged before the experiment is carried far.

There is something—a mysterious something—which eludes the chemist and yet is absolutely essential to human—to all animal life.

Milk contains that something.

Those sections of all large cities where milk is purchased in smallest quantities and meat, corn meal and other foods consumed in larger quantities, proportionately, show greatest percentages of consumptives, while in the south where corn and bacon predominate and milk is little used, there appear pellagra and berri-berri.

Milk production is decreasing in the United States. "The dairy industry has made us what we are."

The industry must be made profitable.

Organize.

ROLLING TRACTOR SCHOOL

Marshall DeMotte, chairman of the state board of control, also of the council of defense, has launched an idea which is bound to become something more concrete. He explained the movement—for it has begun to move—while we listened to the band contest at the State Fair this week. The music may have lent force to his idea, but we think it will stand alone—or rather it will roll along under its own power. It has no self starter, but a few who have taken a turn at the crank have given the impetus.

It's a California-tractor-and-truck-school-on-wheels idea — a rolling school. It is to be under the supervision of the vocational educational division of the state board of education and with the cooperation of various manufacturers of tractors and trucks.

It will be strictly a high school feature, but with the understanding that in every neighborhood or district the school is held it shall be open to farmers or tractor operators of any age. The regular curriculum of the school must be changed for the week or two weeks of the special school. When the course is finished the entire "school" of trucks and tractors moves to the nearest high school which wishes it.

Regarding the plan Mr. DeMotte said:

"It is probable that we will have four or five units for the state. Each one of these will have several tractors and necessary machinery to be carried from place to place in motor trucks and trailers. Each unit will have two divisions, one to consist of an instructor with a truck and equipment, which will enable him to lecture and demonstrate on the care and operation of a gas engine. He will give instruction as to theory and practice with gas engines, and will make the students acquainted particularly with the ignition systems, which seem so difficult for many to understand. Instruction of this nature will consume two weeks of the twenty-four days' course.

"The engine man will be followed by field division, which will give instruction as to the operation of tractors in the field. This portion of the course, also, will consume two weeks.

"It has been decided by the state board of control and State Controller John S. Chambers that half of the expense of the work may be taken from the emergency funds of the state the other half to be borne by the local school authorities where the schools are held. Local authorities also will be expected to provide class rooms, fields for tractor work and shelter for the machines."

This Week's War Notes

All is quiet along the Mexican border.

The government wheat price for 1919 has been fixed as the same as the 1918 price, $2.20 per bushel minimum in primary markets.

The state food administration is going after grocers who have been selling sugar at ten cents a pound instead of the legal nine cents—and some others.

Some 300 colleges throughout the country have been selected by the war department for instruction of the Students Army Training Corps. Instruction begins October 1.

News comes from The Hague that von Hertling has been retired as chancellor of Germany and Dr. Solf has been appointed his successor. This is supposed to presage peace overtures.

September 12 has been named as registration day for all men between 18 and 45 not already registered in the army draft. It is estimated that this will bring in about 13,000,000. California's quota is 398,552; Arizona's 49,794; Nevada's, 16,116.

By the provisions of the new war revenue bill now before the House exemptions of $1,000 income for unmarried and $2,000 for married persons will be the same as before, but the tax on amount of income above those sums will be trebled.

Allied forces have driven back the Bolshevik Red Guard along the Ussuri River north of Vladivostock. Czecho-Slovak troops are fighting with the Allies. Our government has officially recognized the Czecho-Slovak as an independent nation and one of the Allies.

Kern County is thoroughly aroused over burning of haystacks. Nine were burned Saturday morning, the fires occurring almost simultaneously. Investigations disclosed use of phosphorus. The county council of defense has called citizens together to put a stop to the activities of the fire-bugs.

Ninety-five Americans, including consular officers, all the personnel of the Y. M. C. A., Y. W. C. A. and others have left Moscow for Petrograd and passage through Finland and Sweden. At latest reports Consul General Poole had determined to remain in Moscow. American Ambassador Francis is now in Archangel. Outbreaks are reported at Kiev against the Germans and deepening unrest throughout the Ukraine.

The British and Canadians have captured Lens after having taken the Drocourt-Queant line, known as the Wotan line, an important switch back of the Hindenburg line. They have made an advance of four miles on a twenty-mile front. The Allied captures of prisoners between July 15 and September 1 are officially reported to number 128,302. Guns to the number of 2069 have been taken with more than 15,000 machine guns and mine throwers.

Fierce fighting from Ypres to Rheims. Our American forces are heard from south of Ypres, where, with the British, they have taken the Belgian town of Vermozelle and are pushing on eastward. Near Soissons they are fighting with the French, and Gen. Pershing announces the capture of Terny-Sorny, north of the Aisne. In Monday's operations they captured 572 prisoners, two 104's and 78 machine guns. The work of our artillery has been notable. So close did the gun crews get to the Germans that they made many captures of prisoners.

Pleasure, Profit, Patriotism at the State Fair

By the Cultivator Bunch

PRESIDENT ROEDING is one busy man—or rather several busy men. Secretary Paine likewise looks several ways as questions are presented, and the entire board of directors are in almost constant session these first days of the State Fair. There are some dis-

Board of Directors of California State Fair

Left to right: E. Franklin, T. H. Dudley, I. L. Borden, T. H. Ramsay, Geo. C. Roeding, J. M. Perry, H. A. Jastro, E. F. Mitchell and C. J. Chenu. Absent: Col. Theo. Grier, E. J. Delorey and R. W. Bull.

appointments. The agricultural building is not finished, for instance, but generally exhibits are in place and they are above the average. The weather is favorable. One of the local papers chronicles "auspicious opening under 'autumnal skies'."

"The war" dominates. Government exhibits, Red Cross, Y. M. C. A. and allied interests are represented. The food administration has one of the largest. Posters, "Produce Food," "Save Food," "Join the Red Cross," "Gee, I Wish I Could Enlist," "The Government Wants YOU," and a thousand others are used for fillers everywhere. The army and navy have exhibits of machine guns, torpedoes and wireless, and show you a depth bomb and explain how it may be "set" to explode its 300 pounds of T. N. T. at any depth from 40 to 150 feet.

And the crowd breaks away from a horse race to see the sailor boys or their band. Classy? Sure!

Many state commissions and organizations are using the occasion to make known their activities. The state university occupies three buildings, the creamery, refrigerator or dairy foods building, the dairy farm, then the two buildings are connected by a roof which makes another building larger than either. The university is not an entrant for premiums, but is simply an exhibitor.

The state horticultural commission has a complete exhibit with three specials, each an outstanding one. The first is rodent control, next fruit standardization, and then in the balcony above the state insectary exhibit. In the latter are, of course, a collection of the native lady birds which are being boarded for nothing providing they will later fly away from home and into melon and other fields and eat aphis.

Then there is another, a new bug big enough and handsome enough for a millinery ornament. More than an inch long, irridescent green or red according to the angle, but always beautiful. I saw five of them devouring a big caterpillar. They were going at him like so many terriers after a rat. I haven't introduced him? His name is Calosoma sycophanta, a native of France and brought by the federal government to eat up the gypsy moth pest of New England.

The standardization exhibit is most shocking. It is in part made up of fruit from packages which have been condemned: wormy, gnarled, rotten apples; plums of all stages of greenness and variation in crate of 68 per cent in size—all captured from some shipment of "California" fruit. The shipper is spared the disgrace of his name appearing on the package. Too bad, for the state should point its finger and "for shame" him into decency.

Yolo County, San Joaquin County, Fresno County, Sacramento County, all make fine feature exhibits. The Japanese Producers Association has an exceptionally fine booth and display of their products.

But we can't get the whole fair in the Cultivator. There's the machinery, implements, and tractors—wait till next week—and many features of interest. But about the live stock:

The State Fair Has Good Music

There are several bands. This one is from Mare Island Navy Yard.

BEEF CLASSES AT THE STATE FAIR

Written for California Cultivator
By Ralph P. Royce

THIS year's show of beef cattle at Sacramento is, in many respects, the strongest show ever held at the state fair. Certainly, the leading breeds are better represented than in the past and the show throughout is better balanced. For a good many years the state fair was regarded as a Shorthorn show. Herefords were rarely seen and Angus were never expected. It is different now. The red, white and roans still hold their lead, but if "coming events cast their shadows before" it will not be a great while before the other breeds will be actively contending for the favor of the cattlemen of this state.

The Hereford show is quite the strongest this breed has staged for a number of years. Very creditable herds will make an interesting show. For the most part the aged classes will be light, but condition is noted all down the line. Shortage of help and high priced feed make it rather difficult to bring out aged stuff fitted to the point necessary to win. Considerable comment has been expressed by those who have followed the cattle show at Sacramento to the effect that the exhibitors are bringing out better fitted herds each year.

One of the most encouraging features of the show is the number of new exhibitors. Each year new herds are in competition. This fact is significant—it indicates that the pure-bred cattle industry is a growing one in this state. Grow it must. With a market that will require years to fill and an awakening appreciation of the value and possibility of pure bred bulls on the ranges of the state, the breeders can view the future with a great deal of optimism. There is no question as to whether good cattle can be produced here. The only question is, will the California breeders seize the opportunity? The answer to the question is the increasing scope and importance of the state fair. From a purely local show it has developed until this year herds from three states are competing for the honors of the breeds. For the first time herds of Shorthorns, Angus and Herefords fill the big barns.

The Shorthorns have been represented by more herds and perhaps by animals of more outstanding quality, but the classes are well filled and a good show is assured.

Following up the show of last year, the Herefords are back with more herds and better filled classes. Two herds from Nevada with three from California are entered. The Hereford breeders on the Coast are a progressive lot who are apparently determined to make their breed a factor in the cattle industry of the state.

For the first time in years visitors at the state fair had an opportunity to see a full herd of high class Angus. This herd is comparatively new in this state, but there is room for it and considerable interest is being manifested in the "doddles."

The following breeders are represented :

Shorthorns

W. M. Carruthers, Live Oak; T. S. Glide, Davis; Hopland Stock Farm, Hopland; Pacheco Cattle Co., Hollister; Roselawn Stock Farm, Woodland.

Herefords

John A. Bunting, Mission San Jose; J. H. Cazier & Sons Co., Wells, Nevada; W. D. Duke, Likely; W. M. Simpson, Hood; University of Nevada, Reno, Nevada.

Aberdeen-Angus

Congdon & Battles, North Yakima, Washington.

STATE FAIR NOTES

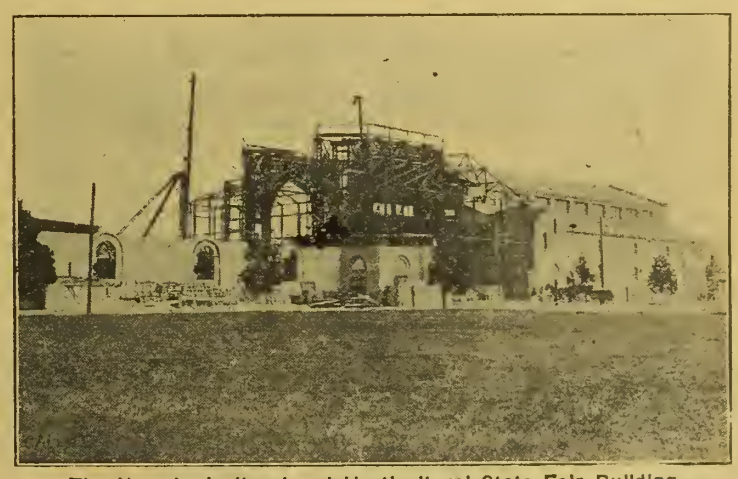
Written for California Cultivator
By W. S. Guilford

BREEDERS and exhibitors of registered hogs in California today are in the fortunate and enviable position of being of very great service to the nation. Pork is one of the commodities most useful to the army—and those who are able to increase the supply are helping win the war in a material way.

There was never before a demonstration of the value of good breeding and feeding that was more striking—or that was brought home to everyone in a more striking manner than the hogs of all breeds at the state fair this year. This is particularly true in the pig classes. There are many pigs under six months old that weigh better than 250 pounds.

And every good boar that any breeder sells to go into service in grade or pure bred herds is a "war worker." His pigs will grow faster and make more pork—good pork—than the offspring of any scrub sire.

We need many more breeders of registered hogs, and many more will get the incentive for establishing herds at this fair.



The New Agricultural and Horticultural State Fair Building

To cost when completed $300,000 and to be a most complete and permanent asset of the State Board of Agriculture.

Berkshires at the Fair

Every year it has been possible to say that the Berkshire show is better than at any preceding Pacific Coast event. This is true this year in stronger terms than ever before.

Continued on Page 234

Agricultural News Notes of the Pacific Coast

Northern California

Esparto is busy with the almond harvest.

Gridley, Butte County, is to have a new dried milk plant.

Sacramento will have three rice mills in operation this season.

Butte County rice growers are paying 26 to 28 cents for rice bags.

Glenn County's wheat acreage the present year is 6000 acres above normal.

The annual poultry show of the Hayward Pigeon Club will be held November 22-24.

Alfalfa growers of Yolo County have organized and will affiliate with the State Alfalfa Growers' Association.

The Alameda County farm bureau will hold its annual farm picinc today, September 7, at Fernbrook Park.

Sonoma County's fair will be held at Santa Rosa October 10-12. One feature will be a tractor demonstration.

The Yolo County farm bureau will carry on campaigus this winter for more hogs and more sheep on every farm.

The Sonoma farm bureau announces a tractor demonstration at the county fair to be held October 10-12.

Practically all the grain of Yolo County is now in warehouses. The crop is 25 per cent less than that of last year.

Farm Adviser Baade of Napa County advises farmers to keep down next year's weed crop by burning all dry weeds now.

An investigation of the water problem in El Dorado County is being made by the food administration which now has an irrigation expert in the field.

To permit students to finish up the summer work on the ranches the University of California farm school at Davis will open two weeks later than usual, beginning September 27.

Mrs. Adelia Cummings of Biggs is the only woman farmer to be granted an allottment in the Durham Colony now being settled under direction of the California Land Settlement Board.

Cool weather in the pear orchards of Eldorado County is more than welcome, as pears were ripening up too fast owing to necessity for turning off irrigation water from some of the orchards.

Farm Adviser Baade of Napa County says that he is informed by the federal bureau of plant industry that it is possible to graft over old grapevines to the Corinth grape, commonly called the Zante currant.

Central California

Farmers short course at Davis opens September 20.

San Mateo County has two new women mail carriers.

Grain growers of Madera County have formed an organization.

Merced aud Madera Counties are having squirrel clean-up campaigns.

Kings County creameries paid $200,000 for cream checks for the month.

Stanislaus County farm bureau has shipped 30,000 pounds of wool to Boston.

The government wants 30,000 tons of straw from California for bedding for soldiers.

Farm Adviser Smyth of Madera County is urging the value of winter forage crops.

The Kern County farm bureau held an auction sale of fat hogs at Wasco on August 20.

Fruit growers of Madera County will make their yearly excursion to Kearny Park on September 10.

Kings County farm bureau held an auction sale of hogs on August 23. Prices secured were $16.10 and $16.60.

Grape growers of Madera County have formed a permanent organization and will oppose the dry measure.

All road building except that necessary for war purposes will be discontinued after September 10 by federal order.

The state organization meeting of the California Alfalfa Growers' Association was held in Fresno, August 30 and 31.

The annual convention of the California Creamerymen's Association will be held at Visalia October 17-19. Three hundred creamerymen are expected to be present.

The San Joaquin Valley Counties Association will ask no contributions from the various counties this year. Headquarters of the association will be maintained at Fresno.

Local meetings of the Kern County farm bureau for September: 2, Weed Patch; 4, Kern Delta; 6, McFarlaud; 9, Delano; 11, Wasco; 12, Rio Bravo; 13, Edison-Fairfax; 16, Tehachapi; 18, Pond; 20, Rosedale; 25, Shafter; 27, Arvin.

Committees of wine and hop growers in conference with Senator Phelan were informed that he was unable to hold out much hope to the hop growers, but that he believed the prohibition clause could be so amended that the wine men would be given the necessary time in which to reap the present crop, manufacture the wine and dispose of it.

Southern California

Huntington Beach, Orange County, will hold a fall fair.

California's sugar crop is 25 per cent short of normal.

The Huenéme cannery is working day and night on tomatoes.

Jamul, Sau Diego County, rèports good returns from all crops.

Victor Valley growers of broom corn report satisfactory crops and prices.

San Diego County farm bureau held a picnic at Flinn Springs last Monday.

Sugar beets from the Chino district are now being shipped to the Oxnard factory.

The Orange County farm bureau will hold a picnic at Orange County park August 30.

The walnut crop of Ventura County is estimated at 90 per cent of normal; lemons a full crop.

The Santa Ana Valley Walnut Association has changed its name by dropping out the "Valley".

Anaheim and Garden Grove chilli pepper growers have 5000 acres planted this year and are expecting big prices.

The Farmers' Labor Employment Association of Imperial County has formed a plan of campaign to secure support of all ranchers in the county.

Palo Verde Valley, Riverside County, has started a campaign to secure 1000 cotton pickers for the season. 12,000 acres are planted in that section.

The Fullerton district of Orange County has a big crop of beans this year. The Bastanchury ranch has 2000 acres planted, Blackeyes and Limas.

Three dollars per day for harvest hands has been decided upon by the Ventura County farm bureau. If the farmer boards the laborer the wage is one dollar less.

The acreage yield of sugar beets in Orange County this season is about normal, but the acreage is short owing to difficulties last fall between factories and farmers.

The vexed sewage disposal problem of Alhambra, Pasadena and South Pasadena is entering on another phase. Arrangements have been made for the establishment at Alhambra of an experimental plant for the trying out of a new disposal process.

At farm bureau picnic at Orange County Park last week the new adviser, H. E. Wahlberg, made acquaintance with Orange County people. He succeeds A. R. Sprague who has become orchard manager on the Atascadero project in San Luis Obispo County.

The Coast and General

Cotton picking has begun in the Salt River Valley of Arizona.

The Wenatchee Valley of Washington expects a fair crop of fine apples.

The cranberry bogs of Washington and Oregon give promise of abundant yields this year.

Latah County, Idaho, estimates that much of its bean lands will yield 1000 pounds to the acre.

The Juliaetta section of Idaho has the biggest bean crop on record. The acreage is between 3000 and 4000.

Sheep herders in Oregon are now being paid up to $100 wages. One case is reported where $125 is being paid.

Southeastern Arizona stock ranges are getting very dry. In other sections the rain has put them in very good condition.

Colorado's cantaloupe season is from 10 to 15 days earlier than usual. Growers report the labor situation in fairly good shape.

Idaho farmers are urged not to ship their hay and feed outside the state but to buy cattle and sheep and bring them into Idaho for feeding.

Northern Idaho has had some early rains which have somewhat delayed harvesting operations. The third cutting of alfalfa has already begun.

There are 25,000 workmen in the shipyards of Oregon and southwestern Washington, and nearly that same number of soldiers and civilians getting out airplane spruce.

The courts have upheld the constitutionality of the Idaho law giving priority right of local range to resident live stock owners over the owners of big transient herds.

Army worms have been doing serious damage to crops in Florida, seeming to be especially fond of the castor beans being raised for government airplanes. Their work is now being checked.

Production of oil in the Baku region of the Caspian Sea, just entered by our British allies, amounted in 1917 to over 48,000,000 barrels. This was less than the normal output, the reduction of course being caused by disturbed conditions.

Manufacture of woolen hand knitting yarns has been stopped because of needs of the army. By a later order all the woolen mills on the Pacific Coast have been taken over by the government and civilians are requested to refrain from purchase of woolen goods as much as possible. It is hoped in this way to secure enough wool so that hand knitting yarns may be again supplied to American women for the making of clothing needed by our soldiers.

The Famous Hardie Junior Sprayer

We believe this is the greatest small power sprayer ever manufactured. And placed on the market with phenomenal success in every fruit section in the United States, and vouched for by thousands who own the FAMOUS HARDIE JUNIOR. Equipped with 1½ h. p. engine, battery ignition, 150-gallon tank with mechanical agitator, capacity of four gallons per minute with a steady working pressure of 200 pounds, and with two 25-foot of the best spray hose, fitted with spray rods and nozzles; 4-inch tire truck with pole or shaft.

ALL FOR $275.00, DELIVERED ANYWHERE IN THIS STATE.

If truck is not needed, deduct $45.00.

These prices are subject to change without notice. The wise buyer will place his order now for future delivery.

This low price is made possible by big production.

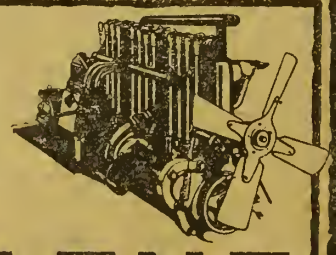
If you are interested in other types and sizes of the HARDIE POWER SPRAYER, write us for the big spray catalog, and learn why we can offer more spray pump value than any other spray pump manufacturer.

Hardie Spray Hose Is the Safest Hose to Buy.

The Hardie Manufacturing Co.

200 N. Los Angeles St., Los Angeles, Cal.

The Valve-in-head-type engine illustrated here, like all *internal combustion engines*, requires an oil that holds its lubricating qualities at cylinder heat, burns clean in the combustion chambers and goes out with exhaust. Zerolene fills these requirements perfectly, *because it is correctly refined from selected California asphalt-base crude.*



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At dealers everywhere and Standard Oil Service Stations.

STANDARD OIL COMPANY

(California)

Advantages of Summer Fallowing

By Prof. John W. Gilmore

THE entrance of the tractor into farming operations and the advantage in fallowing or summer handling of soils being so generally acknowledged, we have asked Prof. John W. Gilmore of the University of California to give a few hints on summer management of soils. Prof. Gilmore writes:

* * *

I have your letter of August 8 regarding the handling of land under our dry farming conditions in preparation for the following crop. I only wish that I had the ability to write an article on this subject that would be commensurate with its importance in our agriculture. I consider the proper making of a summer fallow one of the greatest problems in our agriculture at the present time. When it is remembered that the largest acreage of agricultural land must be handled under a system especially adapted to our rainfall conditions, one can see the importance of the problem. Some day I hope to be able to get the practices involved in this procedure fully set forth.

The usual teaching regarding a summer fallow has been that it conserves moisture. I think, however, that the real benefits go far deeper than this. By properly preparing land under dry farming conditions we get an even distribution of moisture throughout the entire depth of soil as compared with a very dry surface over either rough fallow or bare stubble. This even distribution of moisture ameliorates temperature conditions and consequently the elaboration of plant food, especially available nitrogen. Nitrification takes place more favorably than under any other conditions, and as a matter of fact no summer fallow conserves moisture to any greater extent than would be supplied by the winter rains in case of no fallow at all. But to my mind the greatest benefit that comes of the summer fallow is that the land is ready to plant when it ought to be planted.

As I go through the state I find the greatest variation of crops on the same soil type due to the method of preparing the land and the time of planting. Under our present methods of cereal production, proper land preparation and timely planting will create greater differences in yield than any other factor, oftentimes these amounting to more than 100 percent in my judgment.

Both barley and wheat should be harvested the earliest possible day following its ripening. The combined harvester, while economical in some respects militates against the best interest of the land, in that often times

Deep Plowing

men are delayed for weeks in getting their crops harvested. If farmers owned their binders or two or three adjacent farmers owned their machines in community and could harvest their crop as soon as it is ready, not only would the straw be better for winter feed, but they could proceed to handle their land in a judicious manner and the weed problem would be largely solved.

As soon as grain is taken from the land on most soils the stubble should be disked or double disked. This is not a costly process and would result in much better plowing later on as well as mulching the surface of the soil and cutting the stubble to pieces. Of course there are many farmers who desire to pasture this stubble, but in my judgment the benefits of this practice are worth more in the long run than the pasturing. Except in those types of soil which are heavy and are likely to puddle the land should be plowed in the fall. On heavy soils that are subject to puddling the plowing may well be deferred until spring provided the land is to be fallowed during the summer, but in any case it should be plowed deep. One great trouble with the turning under of stubble interfering with the crop yields and the necessity of burning the stubble is due to shallow plowing or no plowing at all, but merely disking, which is practiced in many localities. If this stubble were turned under deeply, these difficulties would disappear.

There are large areas of our foothill countries which have been cropped continuously to grain for a number of years and now produce only unprofitable yields. Perhaps much of this area should never have been plowed at all, but kept in its native grasses instead. It is difficult now to bring these lands back to normal producing powers without considerable expense and time, but if they are brought back to adequate production, a cropping system must be practiced that will involve judicious plowing and a rotation of crops that will restore to them their necessary organic matter content. A practice that has proven advantageous in many instances and on a wide variety of soils, even where the annual rainfall is less than 15 inches, is as follows: Harvest the grain as soon as possible, disk the stubble thoroughly, dry plow the land where power and implements are at hand; if not plow as soon as the fall rains come on. With suitable implements reduce the surface of the land to a fine condition; only where the land is heavy and likely to puddle it may be left rough. Begin working the land with a disk in the spring as early as possible in order to prepare a good surface for the planting of beans. The bean crop can be removed in sufficient time for preparing the land for a fall crop of grain. This two year rotation may be followed with a cover crop to be plowed under in March every third or fourth winter. This cover crop may be field peas, vetch yellow clover or in some instances bur clover. Fenugreek has been employed but seed of that legume is difficult to secure at the present time. During this very unfavorable season a farmer in a section of less than 18 inches of rainfall has secured 2440 pounds of clean wheat per acre from one piece and 2940 pounds from another. This farmer had carried beans upon the land for two successive years with grain for one year. On this particular land it may not be necessary with this rotation to summer fallow, but there are probably tracts of light land that will require a summer fallow every third or fourth summer to maintain their crop producing power. In brief, every farm is an individual in itself and requires a treatment consistent with the type of land, organic matter content and other fundamental factors, but if we maintain our crop producing power we must pay more attention to the rotation of crops and to the maintenance of the organic matter content of our soils. These, in my judgment are problems that invite the most careful study by every farmer.

Uncle Sam's Fight Against Six-Legged Huns

Written for California Cultivator by Roy E. Campbell

ALTHOUGH entomological investigations are conducted by each of the state experiment stations, the United States department of agriculture has by far the largest and most extensive organization for carrying on investigations looking to the control of our injurious insect pests.

The bureau of entomology, under whose direction this work is being done, has its headquarters in Washington, D. C. It is separated into several divisions according to the various branches of agriculture and horticulture, such as deciduous fruits, tropical and subtropical fruits, cereal and forage crops, truck crops, forest and shade trees, bee culture, etc.; each division investigating the insects affecting the crops or plants in its group.

In carrying on an investigation of an injurious insect, a thorough study of its life history is first made. This shows the length of life, number of generations per year, rapidity of reproduction, the time of year when the insects are most numerous and most injurious, in what stage they pass the different seasons of the year, and many other important facts too numerous to mention here. There often is a certain period in the insect's life when it is much more easily controlled than at other times, and an effort is made to ascertain when this period is. The insect is also studied with reference to its food plants, distribution, origin, natural enemies, and finally control measures.

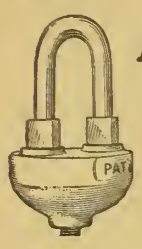
Headquarters U. S. D. A. Truck Crop Investigation at Alhambra
Messrs. Campbell and Ryan on steps.

An investigation of the food plants of an insect may show what is known as alternate hosts, which are plants often of no importance economically on which the insect passes part of the year, usually when the cultivated plant is dormant or out of season. By finding these alternate hosts, and using control measures, or destroying them if they happen to be weeds, the possibility of the cultivated plant being infested later on is lessened. Conversely, the number of alternate hosts may be found to be so great and varied that any sort of artificial control measures are useless until the cultivated plant is attacked.

Another important fact often demonstrated in an entomological investigation is that a modification of agricultural practice will aid greatly in reducing the number of insects. For example, it was discovered that plowing fields in which grasshoppers had laid their eggs, before the latter hatched in the spring, would prevent a ser-

Continued on Page 232

War Time Thrift
All Time Comfort



In patriotic support of our government in these war times—absolute thrift—the wisdom of purchase and elimination of waste—is not only a necessity, but a positive duty.

Do you realize that smoke, soot and fumes is waste?—Loss of fuel?—That from forty to sixty per cent of the heat from wood and coal goes up the chimney?

You can stop all of the loss quickly—make clean gas from coal oil in your own stove. Better still—buy your fuel cheaper than ever.

"The simplest thing in the world" does the work—clean, safe, cheap. Of all the times, this is the time to investigate the "Premier."

A Real Gas Maker **$5.00 Prepaid Anywhere**

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Home Office and Factory, Los Angeles, Cal.

THE DRYING OF FIGS

By I. J. Condit

EVERYBODY who has a fig tree is this year drying the fruit. Sugar is scarce, and anyway dried figs are easily made and good eating. So many requests have come to the Cultivator for republication of these directions by Mr. Condit that we reprint below. Be sure and keep it track of it. If you don't need it now you will later—or your neighbor will.

* * *

Dried figs in California are made mainly from three varieties, the Adriatic, the Smyrna, and the Mission, named in the order of their present importance.

The first crop of the Mission fig is generally sold fresh, but may be dried, and at present prices the dried product may be the more profitable of the two. The second crop is mainly dried but on account of the black color of the fruit does not command as high a price as that of lighter figs. The Mission figs drop to the ground when mature, are picked up shortly after and dried on trays in the sun. No further treatment is generally necessary.

The second crop of the Adriatic and Smyrna is the only one of sufficient size and importance to be of value for drying. The limp and partly dried figs drop naturally or are lightly shaken from the tree and are picked up within three or four days since an inferior product results from too long exposure to the effects of sun, dust, and insects. The figs are hauled to the drying yard and spread on trays, after which the Adriatics are sulphured to bleach the skin and improve the appearance. Sulphuring in lug boxes is often practiced but does not give as uniform or as good results as on trays. Smyrnas which are properly handled should not require sulphuring. Adriatics are dried in direct sunlight from one to three days depending upon the heat and humidity, while Smyrnas are best dried by stacking the trays one above the other so as to allow free circulation of the air between. Over-dried figs become tough, woody, and inferior. After sorting out the bird pecked and split fruit the figs are dumped from the trays into perforated boxes or containers, washed for 20 minutes in cold water containing four ounces of salt to the gallon of water, and again spread out for a final drying of half a day in the sun. They are then placed in piles on a clean floor or in sweat boxes, where they are allowed to go through a sweat for about two weeks, being turned with a shovel two or three times during that interval. Sweating equalizes the moisture and gives the product a better texture. The figs can then be stored for packing or sent to the packing house, care being taken in either case to prevent infestation by insects.

CHANGE IN LOCATION OF THIRD ANNUAL TRACTOR DEMONSTRATION

The Whittier Boulevard site would have been ample for a demonstration of a size similar to last year's meet, but the officials in selecting that location never dreamed of having to accommodate so many exhibitors as have already signed up. Entries have been so heavy during the past week that every estimate on construction and other necessary work has had to be practically doubled. Therefore the big tract of land selected for the site on Whittier Boulevard has been abandoned for larger acreage on Wilshire Boulevard at La Brea Avenue, at the western city limits of Los Angeles.

The new location has many advantages over the original one. It is several hundred acres larger and no matter how many exhibitors enter there will be ample room for all. At the old location only 350 acres were available for a demonstration field with 60 acres for exhibitors' tents. At the new location spectators can more easily witness the demonstration of the scores of models and the operators of the many machines will not feel crowded.

So important will this event be at this critical time when the cry for greater food production is heard on every hand that more than 50 of the exhibitors have been making demands for increased space. The general committee had one of two courses to pursue—either limit each exhibitor to a small amount of space and allow only a few machines on the demonstration field or change the location to a place where several hundred additional acres were available.

Although wide publicity has been given to the location on Whittier Boulevard none of the construction work has been started, so that no financial loss will be entailed.

The Wilshire tract is more easily accessible from points in Los Angeles and surrounding country, being connected with the boulevard running direct to the heart of Los Angeles with smooth paving all the way. The Santa Monica red car line via Sherman leaving the Hill Street station of the Pacific Electric runs past the tract and special car service will be had during the five days of the demonstration.

Remember the new location—it's right at the western city limits of Los Angeles, on Wilshire Boulevard, the main artery of travel to the beaches. The demonstration starts Tuesday at 8 a. m., and runs every day September 17, 18, 19, 20 and 21, closing at 5 p. m. on the final date. No admission will be charged and there will be parking space for over 10,000 automobiles free. A restaurant on the grounds will serve dinner at attractive prices.

Back of The Big Crop

Avery Tractors Helped to Raise It
Avery Threshers Helped to Save It

THE crop this year has been a big one. It would not have been possible had it not been for modern motor machinery. Avery Tractors supplied a large amount of the power back of this big national crop. Avery Tractors and Plows turned thousands of acres of ground, prepared the seed bed and planted and harvested the grain crops. Avery Motor Cultivators planted and cultivated thousands of acres of corn, cotton and other row crops. Avery Separators threshed and saved millions of bushels of grain.

The Avery Company Will Exhibit at the Los Angeles Tractor Demonstration Sept. 17 to 21

An Averyized ranch means success. Tens of thousands of Avery machines are in successful operation throughout the world. There is a size Avery Tractor for every size ranch, an Avery Plow for every size Tractor and an Avery Thresher for every size run. With one of these outfits in the size you need and an Avery Motor Cultivator, your power requirements are taken care of.

Motor Machinery Specialists

The Avery Company are motor machinery specialists. Avery machines are built complete in the three big Avery factories and backed by prompt and permanent service through the Avery Branch Houses and Distributors covering every State in the Union and over 60 Foreign Countries.

When you get an Avery you get a Tractor with renewable inner cylinder walls, adjustable crankshaft boxes, patented sliding frame, patented gasifiers that turn kerosene or distillate into gas, and a tractor that you can attach instantaneously to any machine, either for belt driving or pulling at the drawbar—the coupler is automatic and the belt pulley is always in place.

All the special features in Avery Tractors as well as in Avery Threshers, Motor Cultivators and Plows are shown in big free Avery Motor Catalog. See nearest Avery Dealer or write direct for catalog.

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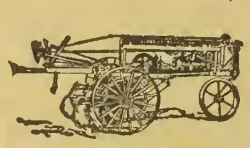
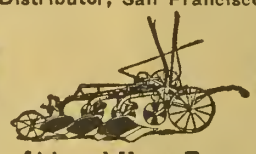


Avery Motor Cultivator

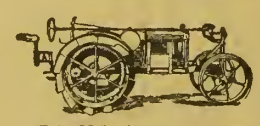


Light and Heavy Tractor Plows for all size Tractors

There's a size Avery Thresher for every size run

AVERY

Motor Farming, Threshing and Road Building Machinery



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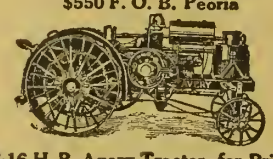

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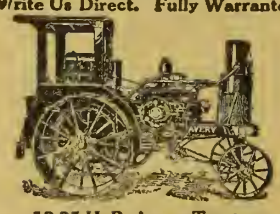

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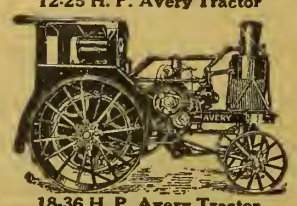

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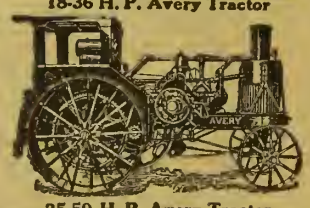
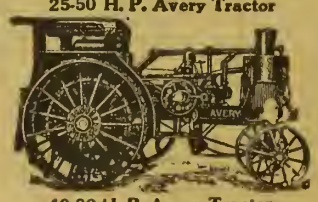


25-50 H. P. Avery Tractor



40-80 H. P. Avery Tractor

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Out of its 112 pages you'll gain much information that will be of great value to you in the selection and arrangement of the furniture and home furnishings that go into your home.

It's such a great satisfaction to buy from actual photograph reproductions and not imaginary pictures. You see, in the pages of Barker Bros'. Catalog, the pieces AS THEY ACTUALLY ARE.

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TEAGUE QUALITY

CITRUS TREES

Orange, Lemon, Pomelo and Lime, bud selected (pedigreed) trees, subject to immediate delivery. Correspondence invited and prices cheerfully quoted.

Founded in 1889

R. M. Teague Citrus Nurseries
SAN DIMAS, CALIFORNIA

IMPROVING THE ORANGE CROP

Not only an increase in production, but what is of equal importance, a higher and much more uniform grade of fruit, is secured by propagating only the most desirable strains of oranges. This has been demonstrated by specialists of the United States department of agriculture who have been conducting investigations since 1909 in citrus fruit districts of California. The primary objects of these investigations were to ascertain the variation which has taken place; to determine the extent to which the different variations have been propagated; and, if possible, to control the extent to which undesirable variations shall enter into the population of commercial groves. The data collected have been published in Bulletin 623, "Citrus-Fruit Improvement: A Study of Bud Variation in the Washington Navel Orange," and Bulletin 624, "Citrus-Fruit Improvement: A Study of Bud Variation in the Valencia Orange."

The various strains of oranges are distinguished by differences in habits of growth, time of ripening, quantity and quality of crops, and other definite and marked characteristics. Trees of some of the undesirable strains show unusually strong vegetative growth, but a poor production of fruit which is of inferior quality. Trees of some other inferior strains bear fruit of irregular and peculiar shapes, undesirable and unattractive color, rough and ugly surfaces, thick peel, a large amount of coarse rag, or a small amount of juice, or juice of a sour or bitter flavor. The fruit produced by some strains is so poor as to be wholly unfit for market.

It is recommended that individual tree performance records be secured in all commercial groves, and that all trees of other than the most desirable strains be removed. This can be done by replacing the inferior trees, or by top-working them. All budwood, whether for use in top-working established trees, or for nursery propagation, should be cut from fruit-bearing branches, one or more typical fruits of the strain desired being cut off with each bud stick as an index of the character of fruit which will be produced by the buds on that stick.

A practical method for securing tree performance records for the purpose of locating undesirable trees, and a discussion of the treatment of such trees, is contained in Department of Agriculture Farmers' Bulletin 794, "Citrus-Fruit Improvement: How To Secure and Use Tree Performance Records," by A. D. Shamel and C. S. Pomeroy.

CALIFORNIA BEAN GROWERS

"The California Bean Growers," writes its president, Geo. A. Turner, "includes about a thousand bean growers, representing great capital and we naturally feel that the government will consult us when it seeks to arrive at a fair price for the 1918 bean crop. California produces just about half of the beans grown in the entire United States and we were this year urged to plant freely in order that our army and navy and those of our allies might have plenty of beans. While we were not enthusiastic about the prices then being offered and although we had to face the seriousness of a labor shortage, we went out and planted beans as we never planted them before.

"This was very fortunate, for it has turned out that this is not a good bean year and the production per acre will fall far short of that of 1917. The total production will show up well, however, for the increased acreage will balance the shortage of yield. We anticipate, of course that the prices for the 1918 crop will be high enough to outweigh the greatly increased cost of production.

"As an association of growers, we are working in close cooperation with the United States food administration. The grower does not want to fix the prices for beans but he does want to be sure that the government fully understands the conditions under which he is producing. When all the facts are laid on the table, he is sure the government will give him a square deal.

"Heretofore, one of the difficulties has been the impossibility of the government's consulting thousands of individual bean growers. Now that we are organized, the views of a thousand growers can be voiced by one authorized representative."

The One Enduring Metal for Crawler Tractors

THE track of a Crawler type tractor meets gruelling service. It must be constructed of wear-defying metal. Otherwise you have constant repair bills and loss from an idle tractor during the busy season.

"Amsco" Manganese steel is as superior to carbon or alloy as hickory is to the soft pine. It increases tractor durability by giving you a track that practically defies wear. It is the most satisfactory metal that has ever been discovered.

"Amsco" Manganese Steel Is Found On Leading Crawler Type Tractors

Tractor makers are fast adopting "Amsco" Manganese. It is proof against abrasion and friction and when used as track metal it stands the wear of constant rubbing against the soil.

Tractor Parts That Should Be Made Of Amsco Wear-Defying Steel

"Amsco" is the "Steel of Endurance" for

Shoes	**Links**	**Pins**
Grousers	**Rollers**	**Lags**
Spacing Blocks	**Sprockets**	**Chains**

Transmission Gears

In Wheel Tractors it is the metal for bull gears, pinions, sprockets and transmission gears.

See "Amsco" at Sacramento and Los Angeles

Many "Amsco" equipped tractors will be exhibited at the Sacramento and Los Angeles demonstrations. You will find these tractors among the leaders in each class and price. May we not mail you new issue of "Amsco Tractor Parts Bulletin"?

AMERICAN MANGANESE STEEL COMPANY
McCormick Building, Chicago, Ill.

Tractors equipped with "AMSCO" parts are on sale by the following dealers:

W. L. Cleveland Co. (Monarch Tractors)
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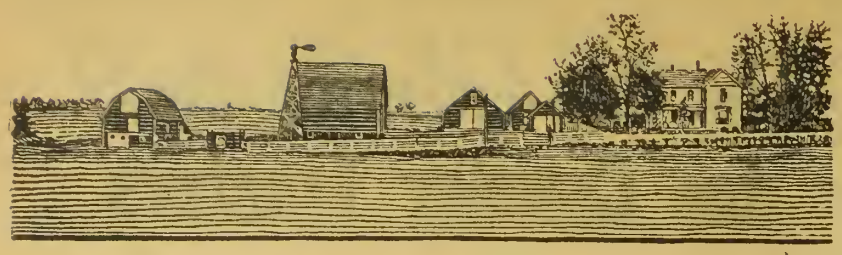
AMSCO
WEAR-DEFYING STEEL



A Pennsylvania Farmer Says Concerning Electric Motors on His Farm

"A one-horse power motor is located in the spring house for separating milk, churning butter, turning a grinding stone, etc.

"In the house, my wife has a ⅙-horse power motor for running a washing machine. This motor can be attached to any lamp socket.

"In the barn a 15-horse power motor mounted on a little truck may be moved to any part of the barn or barnyard for grinding feed, baling hay and threshing grain. By extending the cable we have used this motor 400 feet from the barn."

This letter suggests equally profitable installations around your house and barns. The General Electric Company manufactures all sizes of electric motors for farm use. Information will be gladly furnished by your lighting company or our nearest motor agency.

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Write for our Prices on any NURSERY STOCK in which you may be interested

The World Needs California's Fruits

Uncle Sam says, "Produce," and it's up to the fruit growers of California to make every acre of land produce to the limit. Cull out your poor trees and replant with Elmer Bros.' stock—the kind that produces. If you've bare land available — put it into trees this year. You'll help meet the world's needs — and you'll make big profits, besides! SEND FOR A COPY OF OUR NEW PRICE LIST, WHICH WILL SOON BE READY.

Elmer Bros.' Nursery

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Apollo for Culverts

Rust-resistant, Durable, with Copper Steel base—

Apollo-Keystone Copper Steel Galvanized makes safe, substantial roadway culverts.

APOLLO is the highest quality galvanized product manufactured for Culverts, Flumes, Tanks, Roofing, Spouting, Garages, and all exposed sheet metal work. The added Keystone indicates that Copper Steel is used. Time and weather have proved that APOLLO-KEYSTONE Sheets last longest in actual service. Sold by weight by leading dealers. KEYSTONE COPPER STEEL is also unequaled for Roofing Tin Plates. Send for "Better Buildings" and "Apollo" booklets. They are valuable to all sheet metal users.

AMERICAN SHEET AND TIN PLATE COMPANY, General Offices: Frick Building, Pittsburgh, Pa.

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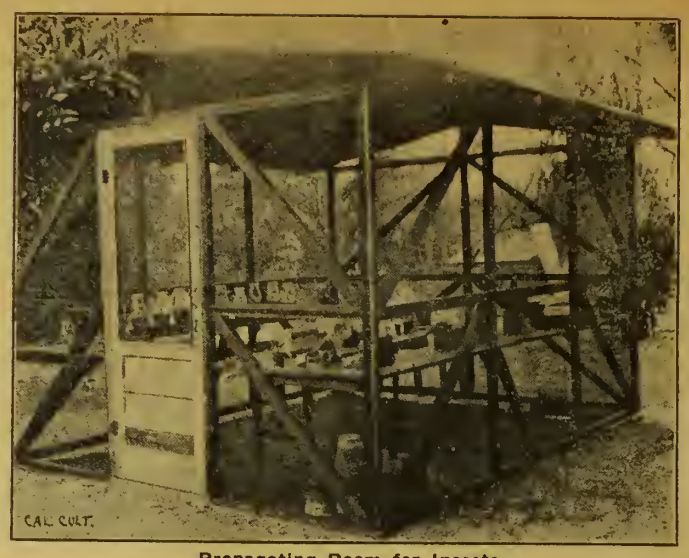
Better service is assured by the advertiser if when writing you mention the California Cultivator.



Propagating Room for Insects

Truck crop investigations of the United States Department of Agriculture near Los Angeles has a station and headquarters on North Marguerita Avenue, Alhambra. This station in charge of Messrs. Campbell and Ryan has been the means of material encouragement to truck crop growing in Southern California; Mr. Ryan's work is almost entirely outside, visiting from ranch to ranch. Any truck growing community which has an insect problem on its hands may secure material aid from this station. Mr. Campbell's work is largely investigational and the illustration above shows his breeding room or cage where beneficial or injurious insects are housed.

UNCLE SAM'S FIGHT

Continued from Page 229

ious infestation later on. The ordinary practice was to plow later after the eggs had hatched. Many insects lay their eggs or find shelter in rubbish, old corn stalks, beet tops, and other plants left in the field after harvest. It was found that by removing these, plowing them under, feeding or burning them, later insect troubles would be thereby averted. Rotation of crops is another agricultural practice which was demonstrated to be effective against many insect outbreaks.

The main object of all entomological investigations is, of course, to find an efficient method of control; natural enemies if possible, a change in agricultural practice, or finally some artificial method, such as spraying, fumigating, poison baits, traps, etc. Many different methods and materials are tried in order to find which are the most efficient and practical.

Besides the executive work, some investigations are carried on at Washington, D. C. However, most of the practical entomological work is conducted in more or less temporary field stations scattered over the country. These are situated so as to be easily accessible to several localities in which injurious insects are present.

The division of truck crop insects maintains such a station at 800 North Marguerita Avenue, Alhambra, where investigations of insects affecting beans, beets, and truck crops are being carried on. Figure 1 shows the house used for office and laboratory, figure 2 shows the screen insectary in which experiments are carried on under practically natural outdoor conditions. The fields of the San Gabriel and San Fernando Valleys are easily accessible, and numerous good roads make it possible to get to all parts of Los Angeles and Orange Counties in a short time. In fact, all of Southern California is covered in the investigations of truck crop, bean and beet insects.

At the present time the principal insects under investigation are the pea aphis, the bean aphis, the celery worm and the broad bean weevil. Slugs and snails are also being studied. As soon as the work on any of these is finished some other pest of our crops will be taken up.

Besides the experimental work, a force is maintained to carry on demonstrations as well. Whenever there is an insect outbreak, or danger of one on the above mentioned crops, advice is given as to the best method of control, either verbally, through correspondence and the distribution of literature, illustrated talks at farm bureau, and other meetings, or by actual field demonstrations.

This Month in the Vegetable Garden

Northern California

Written for California Cultivator By A. R. Gould

AS THERE is still an urgent need for us to keep on producing vegetables to help out the food supply we must this year keep on to the very limit, and it is possible that we may yet be favored with mild weather during the next two or three months and we can therefore have quite a few more subjects in our fall garden and be well supplied through the winter. Should we be fortunate enough to get early rains and a much heavier rainfall this season we shall be justified in preparing for this as an increased rainfall is certainly now about due.

It will also be necessary for us to make a general survey of our plots and clean off all those from which we are taking our last crop such as early corn, beans, lettuce, and potatoes. Have these well prepared by trenching deeply with well rotted manure and refuse, wood, ashes, etc. Have all these plots well fortified and put into shape for heavy cropping during the coming season, and it will also be advisable to keep a record chart of the name of crop grown on the particular plots this season to enable you to carry out your system of rotational cropping for this coming season. This is of great importance, and furthermore it gives one greater interest. You can also include such data as the yields, and condition of crop, etc. Dates of sowing and maturing of crops are also very essential details. There will also be undoubtedly a surplus this month, and nothing should be allowed to waste in the ground. There are easy ways of storing and drying and the crops are urgently needed. Furthermore save all the seed you can. This has gone up in price and there will be a shortage on some things.

Beets

Sow on richly manured ground Extra Early Egyptian. Sow the seed in rows very thinly and keep well watered for quick growth. A sowing of the Sea Kale beet or Swiss chard used as spinach may also be made at once. The leaves of this plant may be cut very often. It belongs to the cut and come again variety and should be in every garden.

Potatoes

This crop will be now ready to dig and store away, in fact some have no doubt completed this work. Great care should be taken not to bruise any part of the tubers, and only those which look absolutely sound should be stored away for the winter. It pays to examine them, as any tubers showing signs of disease, if put with the others will soon cause trouble. They should be stored in a dark but not damp place.

Celery and Leeks

Continue to assist the development of these by the application of liquid manure and it will also be necessary

to bleach by tying cardboard or burlap around the stems to make them white.

Carrot

Early Short Horn is an excellent variety to sow during this month. If you have just cleaned off the bean plot sow the carrots there very thinly.

Lettuce

Thin out the varieties sown last month and transplant the best seedlings very carefully and keep them well irrigated. This crop will need all the water you can give it. You can also make the last sowing for the season, using Big Boston variety. This should provide some late lettuce and is a variety which is fairly hardy. California Cream Butter, is not quite so well known but is also valuable for winter use.

Beans

It will not be too early to sow the "Broad Windsor" bean, which is the type known amongst farmers as the "horse bean," but with those who have become acquainted with its food value it is very popular and well worth growing. Not only that but it is ready early in the season. Sow in rows two feet apart, and the beans should be grown at least three or four inches apart in the row. All dry beans should be collected as the pods ripen.

Cabbage

For winter use sow Autumn King, which forms large solid heads. Sow the seed thinly broadcast on some well prepared border, shaded from the sun.

Strawberries

It will be observed that runners are now rooted near the parent plant, and these may be removed and new plantings made. Have the new plots deeply and well trenched with manure and moist before planting.

Tomatoes

These should now be fruiting heavily, and any fruits showing signs of disease should be removed, as the fungus disease quickly develops and the spores quickly spread. Where the soil is inclined to be poor a watering with liquid manure weekly will prove of very great assistance.

Musk Melons

It will be advisable to place a thin piece of board under the fruit. This will then keep them off the ground, as they are liable to rot through excessive moisture.

Southern California

Written for California Cultivator
By D. F. Reichard

AT THIS time of the year when spring sown crops are maturing, remove the litter as fast as possible either by turning it under for fertilizer, burning or cutting it up to make a compost pile. Soak the cleared ground thoroughly to a depth of three feet, plow or spade the plot eight inches to a foot and work it well, making a good seed bed for the reception of seeds for winter crops.

Crops that are already in should be watched that they do not get dry. September is probably the most drying month of the year—it's the end of a long dry summer and the crops grown through the summer have taken all the moisture out in making their growth. On many soils it is advisable to irrigate and plow twice to get the ground in shape to properly germinate the seed. This is done by first thoroughly soaking the ground. Then as soon as it is dried out enough work it up and let lie for from two to four weeks, then irrigate again and work it into shape for planting. By this method the ground is in shape to germinate the seed and bring the young plants up so as to show the rows before it will be necessary to irrigate. After the plants are up furrow out between the rows and irrigate, after which cultivate as soon as the ground can be worked without the dirt sticking to the tools.

A great variety of garden stuff may be planted during September, but one must take into consideration his local climatic conditions when planting tender subjects such as beans, corn, cucumbers and squashes. In sections of mild climate plant Canadian and Ventura Wonder beans, one pound to 200 feet of row, dust with sulphur or spray with Bordeaux mixture before they come into bloom to prevent rust or mildew. Plant Early Maturing sweet corn such as Heath's Early Early Minnesota, or Early Adams if you are in a frostless section. These will be ready for roasting ears about Thanksgiving. If cucumbers or summer squash are planted watch them closely for aphis. Spray with Black Leaf 40 to control this pest; also dust or spray with arsenate of lead to kill any eating insects on the foliage.

September is the ideal month for planting hardy vegetables for winter and early spring use. Peas planted early this month should be ready to pick for Thanksgiving. Use the Yorkshire Hero or the Senator, or if you are near the Coast Startagem and Dwarf Telephones are the best varieties. Plant rather thick in rows, the rows about three feet apart, at the rate of 50 to 60 pounds per acre or one pound to 200 feet of row. Be sure that your peas are planted in ground that retains moisture well for it is necessary to keep the roots of peas cool for the plants to do well. Unless they are growing on subirrigated land peas will have to be irrigated and cultivated every ten days or so until the rains come.

At this time use Early Egyptian beet, Chantenay or Oxheart carrots, Snowball Purple Top Globe turnip, Moss Curled parsley, Half Long parsnips and Iceberg or Los Angeles Mar-

Farm for Profit

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Authoritative tests have proved that as high as 50 per cent increase in crop production may be expected from proper use of fertilizer. Do you realize what that increase means? Fertilizer is the basis of crop production, and compared to the prices of the crops they help to produce, fertilizers were never so cheap as they are today.

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will be raised in America this year than ever before. Make every acre you own or rent, produce to the limit. Fertilize your land—the increase in yield and price of crops will more than pay all the fertilizer expense—it will enable you to farm with profit. Don't spend your time working worn out land. Make it pay—Fertilize with Hauser's Organic Fertilizer.

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Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

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TEST SPECIAL is the practical belting for the churn, the wood-yard saw, and the feed-mill, just as TEST SPECIAL is the dependable belting for the lighting plant, and for all the domestic needs.

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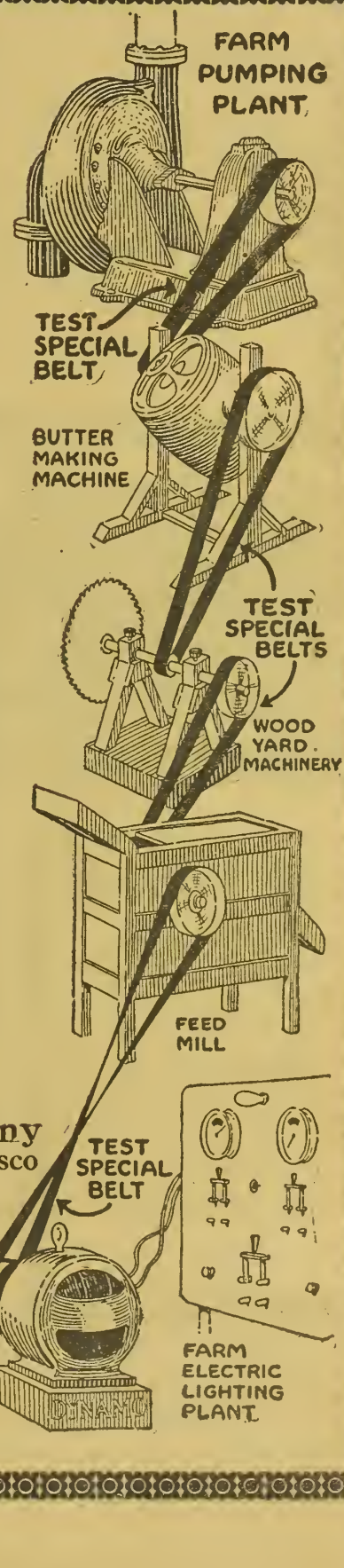
If you will write us, giving details of your requirements, we'll be glad to furnish plans and specifications to help you decide how to get the best service, greatest efficiency and most economy out of TEST SPECIAL belting.



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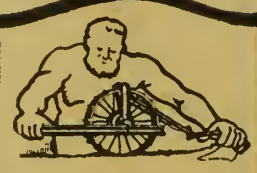
It enables us to build a tractor with **BIG TRACTION, LIGHT WEIGHT, FUEL ECONOMY.**



The Lever Hitch carries the pull of the plows up over the drive wheel. The harder the pull, the better the wheel grips the ground. Note great width of driving wheel surface.

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Because of the Lever Hitch the Nilson Junior, weighing only 5000 pounds, has 3000 pounds drawbar pull at plowing speed, while the Nilson Senior, weighing only 6400 pounds has 4000 pounds drawbar pull at plowing speed.

Nilson Tractors employ three driving wheels keyed on the same axle, making in effect a **WIDE DRUM DRIVE.** They do not pack the soil. They stay **ON TOP.**

It is the Lever Hitch and Drum Drive that enable the Nilson to easily outclass any tractor ever sold in California,—even those equipped with the same Waukesha Motor used in the Nilson.

Nilson Tractors have been thoroughly tried out, and "made good" in California.

See them at the Los Angeles Demonstration, September 17th to 25th.

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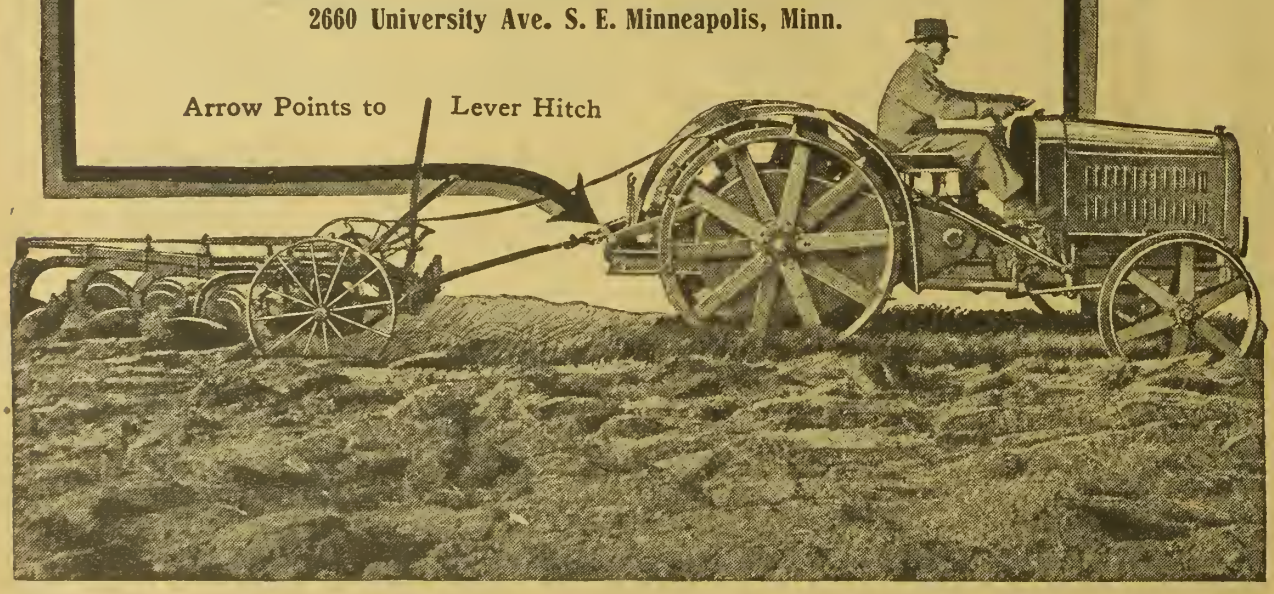
2660 University Ave. S. E. Minneapolis, Minn.



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Ground and Unground
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This is in fine mechanical condition, and on account of its large Phosphoric and Potash content, is a very suitable fertilizer for this season of the year.
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For Harvesting Egyptian Corn

You can use both hands and cut twice as much in a day with the

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as with any other instrument. You cut off the stalk and hold the head with the same hand — and you keep both hands at work, cutting as fast as you can open and shut your fingers. Pair (right and left) $2.50, from your dealer.

Dealers—order from any jobber.

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LARGEST STOCK IN AMERICA
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Sheep - MANURES - Steer

Concentrated
In Perfect Mechanical Condition

Because of the shortage of manures in this territory it will be well to consider NOW your fertilizer requirements for the next twelve months.

More carefully handled and prepared than other manures. From highest nitrogenous feed.

Steer Analysis		Sheep Analysis	
Available Nitrogen	1.58 to 1.75 per cent	Available Nitrogen	1.75 to 2.00 per cent
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" Water Soluble Potash	3.48 to 3.92 per cent	" Water Soluble Potash	3.62 to 3.88 per cent
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Highest in organic, and free from foreign matter. Shipped commercially dry basis.—Saves four-fifths labor in application. Write for price and particulars today to insure prompt delivery.

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423 Citizens National Bank Building, Los Angeles, California. Phone 65643.

ket lettuce for best results. In planting any of this nature of seed double irrigating the land is almost necessary to get a good stand. Beets and parsnips use one ounce to 150 feet of row, while the other items will cover about 300 feet to an ounce of seed. Plant these seeds one to one and a half inches in damp ground. Always plant in rows so as to be able to irrigate and cultivate between them.

Cabbage and cauliflower planted at this time come into maturity during the winter months. Sow the seeds in rows or beds, covering a half to one inch in well prepared damp soil. Use Cannon Ball or Winningstadt cabbage and California Pearl cauliflower. In six to eight weeks the plants should be large enough to set out. An ounce of seed will produce 2000 plants; 7000 to 12,000 plants will plant an acre. Cabbage should be set 14 to 18 inches apart in furrows. Cauliflower is set 24 to 30 inches apart; the furrows three feet apart. Wet the roots of the plants at once after planting and in about a week irrigate down the furrows and cultivate between the rows. This will push loose dirt into the furrows; this covers the roots to a good depth, which they require. Irrigate at intervals of two weeks to keep them in steady growing condition. Spray or dust with arsenic poison (Paris green, arsenate of lime or arsenate of lead) to destroy worms. Brussels Sprouts, kale and kohl-rabi are grown by the same methods.

White Rose potatoes may be planted in protected locations in well worked light soils. Use good sized pieces with at least two eyes on them. Plant five inches deep, a foot a part in rows, two and a half to three feet apart.

Spinach is planted one and a half inches deep in damp soil, one ounce to 100 to 125 feet of row, 15 pounds per acre, rows 18 to 21 inches apart. Giant Amsterdam is the best variety, matures in 60 to 75 days.

Plant Early Queen and Bermuda onion seeds now for early onions. During September it is advisable to start onions in beds and when about the size of a pencil plant out into the field. Cover the seed an inch or less and sprinkle over the whole bed a litter of straw to keep the ground from baking.

In two and a half to three months the plants will be large enough to set out. Thoroughly prepare the ground by working it up a month or six weeks before you expect to plant. This will give the weeds a chance to start and you a chance to kill them before ridging the ground to be planted. Make ridges a foot wide, two and a half feet apart. Plant the sets six inches apart on each side of the ridges.

STATE FAIR NOTES

Continued from Page 227

There are more good Berkshires here this year than have ever before been brought together—and from the information that comes from the east it is safe to state that this is the best state fair show of the breed to be assembled this year.

The one thing about the Berkshire show at this fair that is most pleasing to those most vitally interested in the progress and future of the breed is that each year there are many new breeders who drive into the ring some of the best hogs shown. And these new breeders have invariably been men of standing in the communities in which they lve—men whose judgment and business ability is such that their neighbors follow it.

C. E. Barrows is here with 28 head from the herd of Frank Brush of Santa Rosa, and Mr. Barrows is being commended and congratulated on having one of the most uniform and best fitted lots of hogs that was ever shown anywhere. He is one of the greatest breeders and fitters in the business, and this display is the result of the experience of a life time devoted to the business. The educational value of this production of the best of the breeders and feeders art is hard to estimate.

Charlie Maurer has 24 head from the A. B. Humphrey herd at Escalon—and much the same can be said for this collection. There is keen but very friendly rivalry between these two herds, both of them in the hands of past masters in the breeding world.

One of the sensational features of the show is the exhibit of the Sandercock Land Co. In this new herd foundation animals of the most royal breeding have been brought together. It has the distinction of having the only daughters of a world's grand champion sow sired by a world's grand champion boar, and in addition two sows sired by the grand champion boar at the National Swine show out of the grand champion sow at

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Price Complete $450.00 for the next 30 days

This drier is so constructed that no smoke, soot or gas can get into the drying chamber. The heat is regulated by a gauge which is always in sight.

With this New Way Drier you can do drying on a commercial basis, or use it for home drying of any kind of fruit or vegetables. It can be used the year round, whenever there is anything available for drying purposes. It is not affected by outside temperatures and will give a perfect, even heat at all times. Can be fired when put up and the drying can start within a very few minutes. Write for circular.

The New-Way Drier
227 Thirteenth St. San Francisco, Cal.

Cleveland Tractor

$1600 f.o.b. Los Angeles

See Adv. Back Cover

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Sept. 17 to 21

Wilshire Blvd. at La Brea

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the same show. All of these were bought from Brush.

Frank Anderson, the "young" breeder who made a fine record last year, has a much stronger show this—has not only served the interests of the breed by breeding a lot of good hogs, but by giving the merits of Berkshires a great deal of valuable and unique publicity.

Maplewood Stock Farm of Calistoga makes its first show this year, and it is a credit to the institution that has for its motto, "The Best in Berkshires." Homer Hewins, Jr., the manager, is a good judge of hogs and has assembled some of the best individuals of the best families of the breed.

Nevada is represented by two herds; Jas. Wilson, Jr., of Yerrington and the Crescent Creamery of Reno. Berkshires are very popular in the irrigated sections of this rapidly developing state.

W. M. Carruthers is showing seven good ones, and there are many more of his breeding in the show.

The Jas. Mills Orchard Co. of Hamilton City has 20 head—among them some of the largest and best pigs under six months that have ever been shown in the west.

Another new exhibitor with a very creditable show is Castleview Ranch of Santa Rosa.

There is always the best of feeling and harmony among the breeders and visitors around the Berkshire show. Those who visit one year look forward with pleasure and interest to being in on the next.

* * *

THE SHEEP SHOW

The sheep show was small in numbers, but very high in quality. We need lots more registered sheep in California, and a good many flocks are being established. Next year there will undoubtedly be many more shown.

Bishop Bros. of San Ramon have some wonderful Shropshires. This flock has won championship honors at the greatest shows in the world and is worth going a long way to see.

Bullard Bros. Rambouillets from Woodland also have a national reputation and their show is a good one.

An attractive and valuable feature of the sheep show is the exhibit of Dorsets shown by John E. Marble of Redlands. There is a good field for this breed of sheep in California, and the representatives from this flock are in fine shape and attractively presented.

Hampshires are shown by Jos. Levy of Manteca.

HOGS WILL HURRY THE HUN

Written for California Cultivator
By C. A. Briggs

NOT the largest hog show in numbers but as fine in quality and fitting as any in years is the judgment of the show ring veterans at the Sacramento state fair in this war year of 1918. They are all there again; Bassett and Bernstein, Barrows and Beckman, Slocum and Lamb, generals, colonels, majors, captains, down to the newly enlisted privates in the ranks, the enthusiastic boys with the laurels of their boys' pig club victories fresh on their brows. Josh, jolly and dare are flying about the yards and alleys of pigdom, and there must be from all the claims not less than 140 grand champions and a blue ribbon at least for every entry.

It's a good show and every hog lover and lover of his country who plans to raise hogs this year, if never before and never again, to help win this war—which is our war—should be here and pick his foundation stock and buy it too. The best is here, come and see it.

The Poland-China show is fine. M. Bassett shows 18. His sow herd is headed by a splendid boar, Orange King. His great boar got in a fight with two husky sows the day before shipment and was so badly cut that he could not be shown, which is a Bassett misfortune, as many of his admirers had him picked for the grand champion. The sows in the Bassett showing are probably the best that he has ever shown, which is a pretty strong statement. Archie Bassett is a chip of the old block. His daddy says, "a new block better than the old one," shows ten entries with a wonderful specimen boar who helped lick his dad, Model Fellow, before leaving home. Mr. Bassett the elder is ready to admit that the judge may pin the ribbons on Archie.

John M. Bernstein shows 20 head of the Poland-Chinas. They are good ones. John won't have any other kind. His junior yearling boar, California Smooth

Continued on Page 238

EFFICIENCY AT THE STATE FAIR

Continued from Page 225

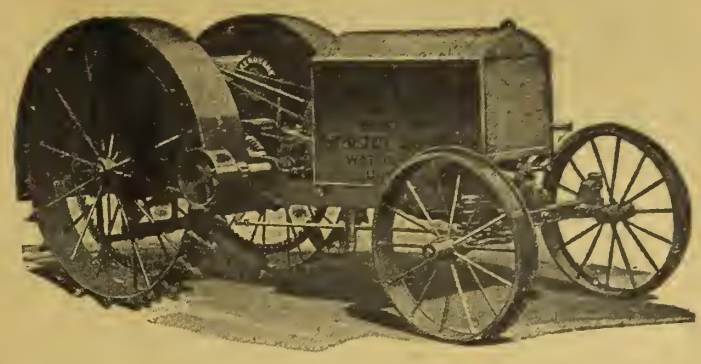
But it's no funeral occasion. Believe me, there's a swing and a stride of which the Kaiser's agents on this side may well take a few snap shots for the perusal of the All Highest and his six sons, every one of which ("which" is all right and perfectly grammatical in this case) has survived the rigors of four years of war with great fortitude.

But the Yanks are coming!

And here at the fair it's all war—save a moment when we stopped to love the lover.—C. B. M.

Sacramento, Aug. 31.

Interstate Tractors



13-30 "The Plowman" 15-30

See these tractors operate at Tractor Show September 17th to 21st, inclusive, Space No. 13.

Watch this "PLOWMAN" get down and pull. Read these specifications:

Specifications 15-30

DRAW BAR—15-H. P. BELT—30-H. P.
RADIATOR—Perfex, extra size, non-freezable. Cooling—triple type, fan, pump and syphon.
MOTOR—4-cylinder Buda YU, 4½-in. bore, 6-in. stroke. Lubrication—full force feed under pressure to all bearings.
IGNITION—High tension magneto, with impulse starter.
CARBURETOR—Bennett producer type multiple jet 1½-in. Adapted for kerosene or gasoline.
AIR CLEANER—Bennett Centrifugal, making motor dirt proof.
CLUTCH—Multiple dry disc type, eight discs, raybestos facing.
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TRANSMISSION—Foote standard sliding gear, running in oil. Two speeds forward, one reverse. Plowing speed, 3 miles per hour. Reserve speed, 2 miles per hour.
BEARINGS—Long series Hyatt Roller Bearings used throughout transmission.
GEARS—Drop forged, heat treated, hardened.
BELT PULLEY—8x14 inches, 590 r. p. m. Belt speed 2600 feet per minute.
DRIVING GEAR—Solid cast iron ring gear of extra strength and width.
REAR WHEELS—French & Hecht 60x12-in., Hyatt Roller Bearings in dust proof hubs.
FRONT WHEELS—French & Hecht 30x5½-in. detachable rims. Hyatt Roller Bearings, dust proof hubs.
BRAKE—Raybestos lined band brake.
FRONT AXLE—Oscillating, short turn.
FRAME—Heavy 5-in. steel channels, 11½ pounds to the foot.
WEIGHT—Total approximately 4800 pounds. On front wheels 1850 pounds. On rear wheels 2950 pounds.
TURNING RADIUS—Inside. 15 feet. Tread, 4 feet 11 inches.
DIMENSIONS—Height of tractor, 5¾ feet. Length over all, 13 feet. Width 5½ feet. Wheelbase, 99 inches.

Doak Tractor Company
Los Angeles 236 Marsh-Strong Bldg.
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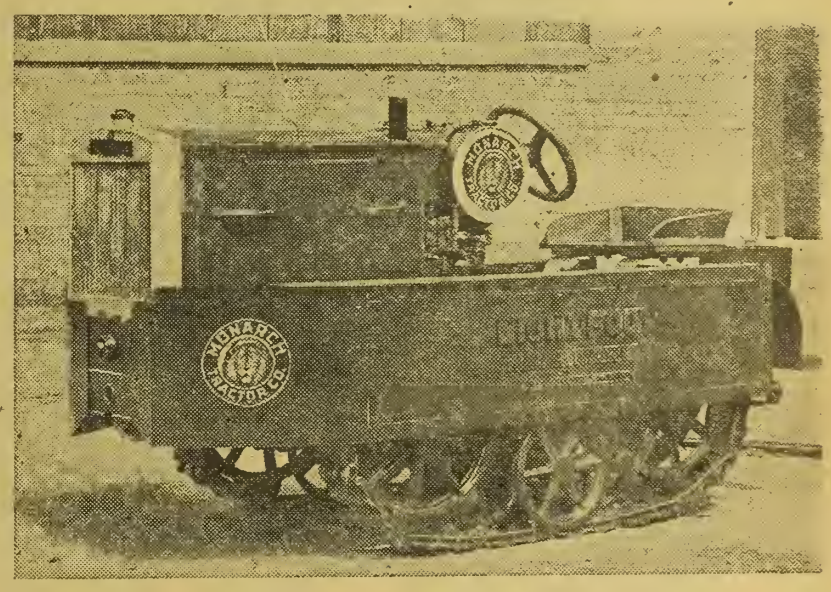
An Opportunity for Live Agents

Monarch Tractors



Made in Three Sizes

Manganese Steel Tracks Car Journal Bearings Easy to Handle Economical in Operation

The Monarch tractor is offered at prices much lower than is asked for other makes of equal capacity and the construction is such as to reduce the cost of upkeep to a minimum. Read what Charles E. Guest of Calipatria, Imperial County, has to say regarding it.

W. L. Cleveland Co., 211 No. Los Angeles Street, Los Angeles. Calipatria, Cal., September 1, 1918.
Gentlemen—Yours received. Will say in answer as to how my tractor is running and what I think of it is, that I am satisfied and well pleased with it. The Monarch has ample power and seems to be holding up well. I am pulling a Holt 5 Disc Plow, six inches deep with it, and it is no load, while the ground plows hard. I am running two shifts every day and have not been held up at all on account of the engine.
I don't think any one could go wrong by getting a Monarch; I have run mine three months and it has not shown any signs of weakness or wear and is economical to operate. Yours truly, C. E. Guest

The illustration is of the light orchard and vineyard machine. Larger sizes known as the 12-20 and the 18-30 are now in stock for immediate delivery. Send for printed matter regarding the Monarch. Will be shown at the Tractor demonstration September 17-21.

W. L. CLEVELAND CO., 211 No. Los Angeles St., Los Angeles, Cal. **Phone 11177**

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The Original Kerosene Tractor
For War-Time Speed in All Farm Work

Thousands of Waterloo Boy tractors are drafted into service to speed up farm work—standing the most drastic service tests in field and belt work.

Its three-plow pulling capacity and 25 horsepower at the belt, easy handling and dependability give it the widest range of usefulness on the average farm.

1 Man
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3 Plow

Stands on the Bedrock of Over 4 Years Proven Success

The Waterloo Boy has long since passed the experimental stage. It has the confidence of the farming world because of exceptional performance in the hands of users.

Powerful, quick-starting motor, perfect kerosene-burning manifo'd, automatic lubrication, complete and easy accessibility of working parts, are some of the features you will appreciate.

Illustrated catalog, sent free, shows detailed construction and numerous photographic views of Waterloo Boy tractors at work on farms. Write for it.

Waterloo Gasoline Engine Co.
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Belt Power for 24 to 26" Thresher or 17" Silage Cutter

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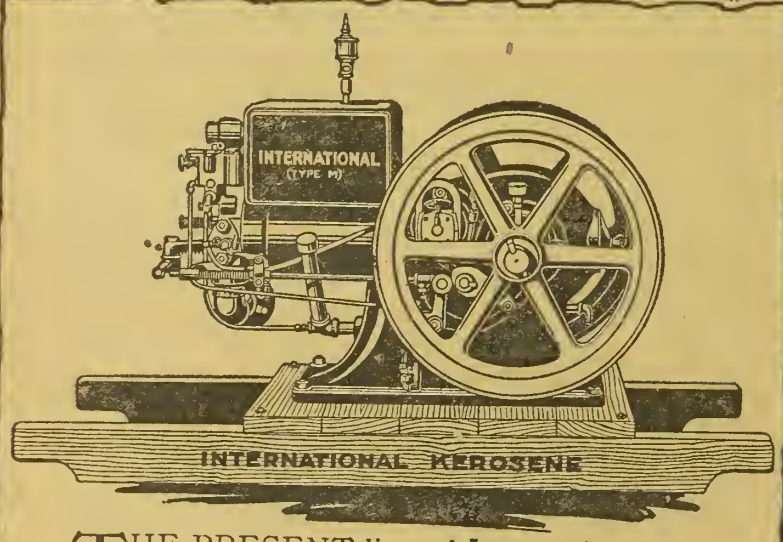

THE PRESENT line of **International Engines** gives every farmer a chance to buy the very engine he needs at a price he can well afford to pay.

The sizes now run from 1 to 15-H. P., with a special line in the 1½, 3, and 6-H. P. sizes, known as the **International Type M.** All sizes, even the smallest, operate on common coal oil and other cheap fuels testing down to 39 degrees Baume. Every engine develops more than its rated horse power. All conform to International standards of quality, insuring good service, long life, and cheap operation.

It will pay any farmer who is in the market for a good engine, at a fair price, to pay close attention to the International line. If you can use a 1½, 3, or 6-H. P. engine, the Type M will give you a number of pleasant surprises in features, the value of which any engine-using farmer can appreciate.

The local dealer either has an International engine in stock, or can get one for you to see. If he has not told you about our engines yet, write us for complete information.

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Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

When writing advertisers, mention The Cultivator.

Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Garden Book—Ants

I have just finished reading your "The Garden Beautiful" and am very much pleased with it. I have learned more from this volume than any of the several others I have on flowers. Is there any large one volume work on flowers and shrubs which one could get to help out a rank amateur in the flower garden?

Also, in the California Cultivator (July, I think) I saw a note by you on the Australian shrub, oleaster, but I can't find any catalog which lists it. Of whom could I get this shrub? At what time and how long does it bloom? Do you suppose the camphor tree would thrive here?

As to ants, what is the proportion of that alum and lime mixture, 50-50? The ants are a fierce proposition in Redwood City—C. L. G., Redwood City.

There is no large volume on gardening in California and none that carries so much on gardening proper as "The Garden Beautiful." Others may contain lists and descriptions of plants for California gardens, but such lists and descriptions are to be found in nurserymen's catalogs. But one firm in California handle oleasters, the name of which has been sent you by mail. Information as to its habits and pecularities of behavior in California must be supplied by them as you are in their section of the state. The camphor tree should thrive with you. The alum-lime mixture is usually a 50-50 "dope." Would advise writing University of California, Berkeley, for their bulletin on ants and follow treatment therein advised.—E. B.

Estimating Weight of Milo

Will you please tell me how to estimate the amount of milo in the head in a bin?—Subscriber, Lindsay.

We have no data whatever on this question and will pass it on to our subscribers. Here, however, is a suggestion which may be helpful in arriving. It is for measuring Indian corn on the cob. "Multiply the length in inches by the breadth in inches, and that again by the height in inches, and divide the product by 2748 (the number of cubic inches in a heaped bushel), and the quotient will be the number of bushels of ears. Take two thirds of the quotient for the number of bushels of shelled corn." Regarding estimating milo one could take any square measure such as a packing case or drygoods box and fill as nearly as possible in the same manner as the bin or crib of grain has been filled. This could first be measured and the number of cubic inches ascertained. Then the net contents could easily be determined and the number of cubic inches per bushel or per cental could be quickly approximated. However, it must be borne in mind that any sorghum grain on the head would weigh more per bulk according to the depth of the crib or receptacle than would corn. That is, there would be more grain per thousand cubic inches at the bottom of a 10 or 15 foot container than there would be at the top. Hence it would be a matter of judgment as well as measurement.

Castor Beans

Regarding price to be paid for wild castor beans, if purchased at all, we have written California Castor Bean Association which is handling contract with the war department for 10,000 cars planted with imported seed. Mr. Ganes writes that he has not yet heard definitely from Washington as to whether the department will purchase California wild castor beans at all. If they are purchased, however, he thinks there will be a market for them around $2.00 per bushel.

Name of Apple

In regard to query as to name of apple in Cultivator of August 24 we have the following from E. L. Overholser, assistant professor of pomology in the University of California.

We have given the apple a good deal of study and it seems to be the unanimous decision of the members of the division that it most closely resembles the variety known as the Wagener. With the great variability within a given variety, however, we would not be in a position to state definitely that this is the correct variety named. We would suggest that next season three or four specimens be sent and that we have this additional material to justify our original conclusion. We can, however, be sure that the variety is neither the McIntosh, nor the Fameuse. It is not characteristic of either of the varieties, and the Fameuse and McIntosh belong to a group that succeed best in higher altitudes and more cold regions, while the Wagener is a variety which seems to be adapted primarily to maritime regions.

Lice on Calf

What is the best way to control lice on calf?—Subscriber, Guernsey.

There are good commercial dips which even largest of stock raisers now generally used in preference to taking the time for homemade dips. Therefore we would suggest that if subscriber has dipping tank he should get the regular commercial dip and dilute and use according to directions on can. In case he has no tank or vat then spray or apply with brush.

Bronchitis of Poultry

Would you kindly tell me through your paper what I can do for my chickens? They have a rattling sound in their throats when they breathe. Have tried every thing that I know of to stop this but cannot find a cure. Kindly tell me what it is and if it can be cured.—Subscriber, Novia.

Bronchitis is the cause of the rattling in your chickens' throats. This is due to something wrong in their roosting quarters, which makes them take cold at night. It may be that they are crowded or that their roosting house is not sufficiently open for these warm nights, so that they are chilled on coming out in the morning. There may be a draft through a crack behind the roost or water standing in or near the house. Bronchitis is always caused by something wrong in sanitary conditions, and the only cure is to remedy conditions. A dose of olive oil sometimes helps to relieve the inflammation, but unless the birds are in comfortable, dry, well ventilated quarters there will be no cure.—J. A. K.

Potatoes for Milch Goats

Supplementing answer to a query in the Cultivator of August 10, "Potatoes as Goat Feed," C. Lyman Shedden writes:

When used as an exclusive feed, potatoes will not materially increase the milk flow, and besides are conducive to indigestion and impart to milk an unpalatable flavor. But when boiled

with carrots and fed as a mash with bran the combination is to be recommended. I have found in my many years experience that a heavy milk producing doe is half made in the rearing, and a generous feed of this mash, covered with clear warm water and fed to growing kids, greatly develops the milk glands.

TRACTOR SHORT COURSE AT VISALIA

A course of Operation, Management and Care of Gas Tractors will be held at the Visalia high school September 23-28.

Instruction is to be given by instructors of the University of California, the course to be the same as the gas tractor short courses heretofore given only at the Davis and Riverside and is designed to serve Fresno, Kings, Kern and Tulare Counties. This will be the only short course given in the San Joaquin Valley this year. Indications are that there will be general enrollment from all four counties.

Nine, perhaps ten, tractors will be used to demonstrate the principles of care and upkeep; namely the Bean, Samson, Best, Moline, Holt, Case, International, Wallis, Fordson and probably Cleveland. These, with one exception, are popularly and widely used tractors in South San Joaquin, are adapted to both general farm and orchard work, and are coming into wider use. Some of the agencies have placed 50 or more in the last few months. Speeding up production means speeding up operation and the tractor is helping to solve the problem.

The course is being promoted by the Tulare County farm bureau adviser, C. M. Conner, the Visalia high school agricultural director, R. J. Baker and a committee of tractor owners. A registration fee of $2.00 will be charged to cover expenses. It is desirable that all who expect to attend should notify R. J. Baker, Short Course Registrar or C. M. Conner, Farm Adviser, Visalia, California. A detailed program and complete information will be sent immediately upon request.

SELECT GRAIN SORGHUM SEED

Now is the time to provide for a supply of grain sorghum seed to sow next spring. Select enough of the best heads from the field before harvest time. Pure and high germinating seed of adapted varieties gives best results. Uniformity in stand and in ripening of the crop increases the yield and quality of the grain. When the stalks are all of the same height, harvesting is easier, whether done by hand or by machinery. A lot of poor seed is used each year which is a source of loss to the growers. Guard against that loss next year by selecting homegrown seed. Do not depend on the grain bin or that of neighbors for a supply.

Select heads from plants all of which are dwarf or of average height.

Select early maturing heads.

Select well-formed and well-filled heads of the same type and uniform size.

Select heads that grow completely out of the boot.

Select compact, not sprawly, heads with short, well-loaded branches.

SHATTERING THE GERMAN SWORD

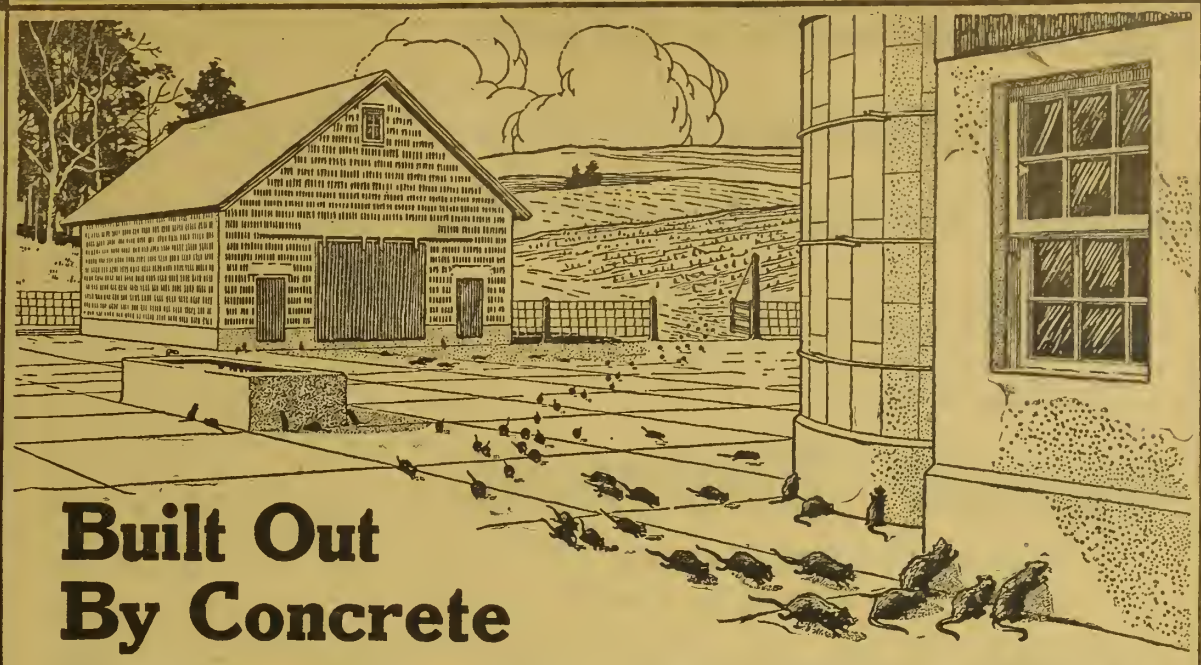
Famine is Germany's trusted weapon in her plan of conquest and slavery. By this dread power she has enforced the deportation of workers, broken down the family unit, caused indescribable terror and anguish.

Famine has desolated Poland, disorganized Russia and forced Rumania to peace.

Germany counted on this weapon in her warfare against Europe, and boasted that her submarines would cut off food supplies and bring England to her knees in three weeks.

But America has shattered the German sword. She has loaded every steamer that came to her shores and the Allies have been fed.

The food minister of France has requisitioned 1918 forage crops. The maximum price for best quality will be $1.00 for 100 pounds and 86 cents for second quality.



Built Out By Concrete

No chance to get into these farm buildings!

Concrete foundations, concrete walls, concrete barnyard pavements, concrete feeding floors provide no home for this army of rats seeking winter cover.

No Rat Can Gnaw Through Concrete

There are no nesting places under concrete floors, no chance of entrance through concrete foundations. Waste caused by rats is enormous. If you house them, you must feed them, and this is no time to feed an army of rats. We must feed our soldiers.

Build Out the Rats with Concrete

Write our nearest office for your free copy Bulletins 131 and 141. They will tell you how you can make your farm ratproof.

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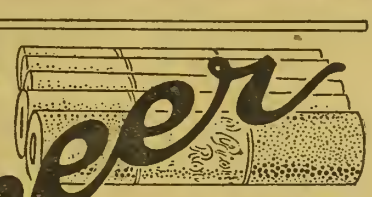
TO PREPARE FOR THE RAINS REPAIR YOUR ROOFS WITH Pioneer ROOFING



NOW IS THE TIME TO GET READY

Have your roofs inspected and if they show indications of leaking this winter—have the repairs made now and don't be caught napping. Keep your buildings up. Don't let them go to pieces for lack of adequate repairs. It is cheaper to repair than to rebuild.

The roof is the most important part of most every building. Just think of the great damage that one little leak can cause.

Pioneer Roofing

—is very economical

Its long life and splendid wearing qualities make Pioneer Roofing a favorite with careful buyers everywhere. In addition, its attractive appearance adds 100 per cent to the looks of the building.

ASK YOUR DEALER FOR PIONEER — THE ORIGINAL and reliable ready roofing. If he cannot supply you, write us.

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It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards six times they will not be affected by mildew or red spiders.

FLEUR DE SOUFRE AND ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand, packed in double sacks, are the fluffiest and purest sulphurs that money can buy; the best for orchards and vineyards; the best for bleaching purposes, LEAVING NO ASH.

Try our new brand of VENTILATED Sublimed Sulphur, 100 per cent pure, for making Paste—Atomic Sulphur and for dry dusting.

For Lime Sulphur Solution, use our DIAMOND S BRAND Refined Flour Sulphur, which we will furnish at a price so cheap that you cannot afford to purchase ready-made solutions.

We are equipped to make immediate shipment. Send for illustrated booklet; also price-list and samples.

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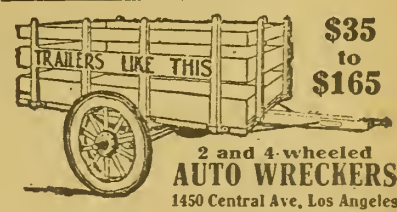

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The Reliance Meter is recognized by water companies and irrigators to be the most accurate and impartial method of measuring water. Send for Copy of Water Watch

Hydrometric Co. 955 North Main St. Los Angeles, Cal.

Correspondence with the advertisers in the California Cultivator will convince you that their articles will save you money.

Location Changed

Mammoth Tractor Demonstration

Owing to the absolute necessity for several hundred additional acres of land to accommodate late entries, the location of the Third Annual Tractor Demonstration has been changed from Whittier Boulevard to

Wilshire Boulevard

Corner La Brea Avenue

at Western City Limits of Los Angeles

Gates Open Tuesday, Sept. 17, 8 a.m.

Third Annual Tractor Demonstration

September 17-18-19-20-21

No Admission **Free Auto Parking**

Tell all your friends about the new, better location. Easily accessible by Santa Monica red line running from Hill Street Station, Los Angeles, and motor boulevards.

Traction Engine & Implement Dealers' Association of Southern California

220 H. W. Hellman Bldg. Los Angeles

Second Modesto Sale

90 Registered 90 Holsteins

Modesto, California Thursday, October 17, 1918

Contributors:

H. E. Cornwell, Modesto
J. W. Benoit, Modesto
Luther Thompson, Modesto
A. M. Bibens, Modesto
C. G. Outland, Modesto
Bonita Stock Farm, Lodi
R. L. Holmes, Modesto
J. A. Pelanda, Modesto
Bridgford Company, Knightsen
The J. S. Gibson Co., Williams
J. M. Campbell, Escalon
Henderson Co., Sacramento

Including the absolute dispersal of the C. G. Outland herd, which contains a choice lot of young cows and heifers, those of breeding age bred to the 30 pound bull Hubbavale Artis Twisk Netherland, who will also be sold.

Luther Thompson is making a beautiful consignment, including a great 23 pound four year old, and his splendid herd sire, Sir Chimacum Wayne Woodcrest, who is by a son of Chimacum Wayne Boon and out of a 29.86 pound junior three year old.

Look for future announcements of this great sale giving list of entries of all consignors. There will be many extraordinary values in this sale, both in males and females, and prospective buyers should make plans now to attend it by all means.

Catalog in preparation. Write for one.

MANAGEMENT

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager — J. M. Henderson, Jr., President

Sacramento, California.

HOGS WILL HURRY THE HUN

Continued from Page 235

Jumbo, is a wonder. Sow in aged class, Fruitful Maid, will surely be in the finals. Some others of his display out of his great boar President are well worth looking over. Don't miss 'em.

W. L. Haig & Son show six of the Polands, with a splendid smooth boar, Young Jumbo, and three fine typey sows as the leading feature.

Hale I. Marsh's Modesto herd is as always among the leaders. The grand old favorite I. B. A. Wonder, the Panama-Pacific reserve grand champion, is still in the running, walking off his 1000 pounds or more without any trouble. One of Hale's sows, Big Knox Girl, isn't far behind, with her 900 pounds flat. She is so very good that many are saying, "It's all over but the shouting."

J. H. Cook of Paradise shows 15 Polands from that heavenly place, among which is a very smooth fine line bred Big Bone sow.

The Modesto herd of J. H. Hansborough shows the grand champion boar of Sacramento 1917, Major Hadley Wonder. He looks in good condition and weighs 100 pounds more than when he won his spurs, now topping the scales at 900 even. He has a great back and bone and will certainly be noticed in the ring.

J. W. Wakefield shows 19 Polands, including a sow and litter of nine that he sold the day before the fair began for $850.

W. A. Young and J. A. Clark show 28 Polands, one junior yearling sow, one junior yearling boar, and the herd sire, Big Bone Bob. "Bob" is a good one. Don't fail to see him. The whole herd is in fine condition, and so is "W. A."

John Leeman shows 10 head Polands, all of one litter and all good quality.

Dimmick Brothers show 17 head Polands headed by senior yearling Model Wonder. In aged sow class Stella Hunter. Balance of stock shown in under year classes.

Geo. V. Beckman & Sons show 21 Polands; junior yearling boar Matchless Big Bob of U. C. Balance of exhibit in under year classes. "George" and the boys are putting up a good show. Take a look at 'em.

Elmer Lamb's Ceres herd of Durocs is, as usual, the "Lamb kind," with good lines and well fitted. Among them worthy of special note are three under year sows, and a boar of extra quality.

J. M. De Vilbiss shows 14 head of Durocs. He is unable to show his 1917 Sacramento grand champion boar, Crimson Monarch 2nd, as he lost him in July, but his showing is a very good one.

F. W. Gardner shows Durocs, four gilts, one under year boar, one aged sow, and one aged boar. They are good.

Dr. E. J. Weldon shows Durocs, four head, three gilts and one boar, all young. Leslie Dixson shows six head of very good under six months Durocs.

Jack Boyd shows Durocs, among others a good aged boar, son of Crimson Wonder 2nd, Sacramento's 1917 grand champion.

J. H. Minto shows ten Durocs, an aged sow, sired by Crimson Monarch 2nd; two senior yearlings and younger stock.

V. F. Dolcini, 25 head of Durocs, many of which show good breeding and individuality.

J. E. Thorpe, 12 head of Durocs; a good showing of yearlings and under year. Futurity stock sired by Johnson's Defender, is of special note. One yearling sow especially smooth and nice in spite of having raised ten pigs.

Glenn County got in late with a big shipment of Durocs: H. P. Slocum, 55 head of his Uneeda Glenn County herd, full classes; W. H. Mains, seven head; C. W. Smith, five head; C. D. Bright, four head; C. W. Scott, eight head; Hollingshead & Sons, six head; John M. Martin and C. R. Hedges, 11 head; W. V. Bennett, two head. This is the biggest county exhibit of any breed shown at the fair and reflects great credit on Glenn County breeders. Shipment totals 99 head.

F. M. Johnson, from Napa, shows Durocs; a fine futurity litter and a junior yearling boar. Mr. Johnson was unfortunate in losing his champion boar, Johnson's Defender, a short time ago, which broke up the exhibit he had planned.

Harry Bailey has the only exhibit of Mule Foots, ten in number. Several are of outstanding merit.

Mrs. L. M. Yore shows eight Chester Whites; Highland Stock Farm, three Chester Whites.

Hiram Henderson, a winner of a first prize in boys' pig club contest, shows five Chester Whites.

R. Dawson, Gardena, shows six Hampshires, two in aged class and four junior pigs. His aged boar weighs 700 pounds at two and a half years.

L. A. Denker shows 24 Hampshires, including five aged sows of great merit. Mr. Denker's fine boar died on the way to the fair.

Conejo Ranch shows 30 Hampshires; ten aged sows, one aged boar, one senior yearling boar, all good, one junior yearling boar, and three very fine fat barrows.

AMONG THE DAIRY BREEDS AT THE FAIR

Written for California Cultivator By C. A. Briggs

NOT a large showing, but a good and an interesting one. The old guard of exhibitors are here as usual; Miller. Thorpe, Conant, Hayworth, Hand, Williams, Locke, McFarland, Humphrey, Saylor and others, representing Jerseys, Guernseys and Ayrshires.

Dr. H. W. Hand shows seven head of Jerseys. J. E. Thorpe has 17 head, Guy H. Miller 15 head, N. H. Locke 15 head, C. D. Hayworth 10 head, D. F. Conant 13 head, J. E. Wherrell four head, S. F. Williams 10 head.

Among the Guernseys L. D. Smith shows 17, W. H. Saylor two, T. I. Levy two, A. B. Humphrey eight.

Milking Shorthorns are represented by Geo. A. Murphy and Alexander & Kelloggs. "George" has 11 head, headed by two-year-old Sunnyside Chief. He also shows an extra good under-year bull. His entire showing is in good condition. The Alexander & Kelloggs show consists of 16 head: Senior herd sire, Glenside Royal; junior sire, Westward Ho Imported. All in well fitted order. One of this exhibit's cows, "Sylvia," has recently completed an official test for a year of 11,772 pounds milk and 482 pounds butter fat.

Ayrshire cattle are well represented this year. E. B. McFarland shows 19 head; Preston School of Industry, 12 head; J. H. Meyers Elkhorn Farm, 13 head.

U. G. Strader shows 28 head of Dutch Belted.

DAIRY CATTLE AT THE STATE FAIR

Written for California Cultivator By C. L. Hughes

California's war time state fair shows somewhat of the stress of the times in dairy cattle exhibits, the showing of Guernseys particularly falling short of previous years. The Jerseys are also somewhat short in numbers, and Holsteins are out in about the same numbers as last year. The Ayrshires are also holding their own in numbers, the show this year having one new exhibitor in addition

Santa Anita Rancho

Anoakia Breeding Farm

Registered Holsteins

A herd of fine individuals, strongly bred in the lines of great production as evidenced by both short and long time records, handled in a manner to produce sound, healthy breeding stock.

Merci Lad Korndyke Burke

our senior herd sire, is by De Kol Hengerveld Burke and out of Winnie Korndyke Cornucopia De Kol, 31,034.1 pounds milk and 1201.00 pounds butter in one year, the first cow in California to produce 120.0 pounds butter in one year. A few of his young sons out of good record dams for sale.

SANTA ANITA RANCHO *Santa Anita, Cal.*

Anita M. Baldwin, Owner - . *W. H. Taylor Supt.*

Prince Hiske Walker

He is by Prince Geische Walker and out of Hiske of Riverside, being therefore full brother to Lady Hiske Walker, 34.25 pounds butter in seven days as a junior four year old, former state record in class.

His offspring are uniformly straight, vigorous, and well marked. A few of his young sons for sale.

Packwood Farm

W. F. Mitchell, Owner *Visalia, Cal.*

JERSEYS

The PROFIT BREED

WHY waste feed on cows that skim their own milk? Jersey's produce the highest percentage of butter fat at the lowest feed cost. The man with one Jersey is never satisfied until he has a herd. Write to Breeders for pedigrees and prices. Let us send you profitable facts about the Jersey.

THE AMERICAN JERSEY CATTLE CLUB
322 West 23rd St. New York City

Jersey Bull
FOR SALE
A fine straight one, bred right, priced right
S. F. WILLIAMS
ORLAND, CAL.
Member Orland Jersey Cattle Club.

Fuimus Farms - Jerseys
Herd Headed by You'll Do Oxford's Lad
Write Us Your Wants
J. E. Wherrell
1581 Sedgwick St., Riverside, Cal.

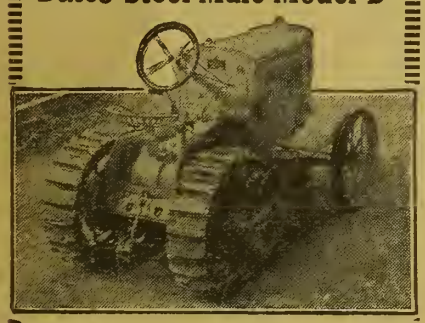
Venadera Herd
REGISTERED JERSEYS
Young bulls from proven dams in Register of Merit
GUY H. MILLER
MODESTO, CAL.

ALL MY RECORDS are made under ordinary dairy conditions. The farmers cow is
The Jersey
YOUNG BULLS FOR SALE
C. D. HAYWORTH
MODESTO, CAL.

Young Jersey Bulls
FOR SALE
One at the head of your herd will pay big dividends on his cost. Write to
W. J. HACKETT
MODESTO, CAL.

Get One of My Jersey Bulls
to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glynllyn.
Visitors Welcome Correspondence Invited
A. A. Jenkins
R. R. Box 46 Tulare, Cal.

Bates Steel Mule Model D



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Clear and Clean as Water

B-K keeps tubes and cups sweet and clean. Penetrates milk solids—kills the bacteria. Is clean—harmless—cannot taint milk. B-K makes rubber parts last longer—cannot harm metal. Used and recommended by Milking Machine Manufacturers for years. Cheapest in actual use—sold under guarantee. Get B-K today—end sour milk troubles. Send us your order and your dealer's name. Send for dairy bulletins and "trial offer."

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PUMPS, ENGINES, SPRAYERS, HOISTS ETC.
Catalog FREE on Request
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LOS ANGELES

to the well known McFarland and Preston School herds.

The dairy cattle showed up in very good condition considering the difficulties under which breeders found themselves in fitting, and the exhibit as a whole fulfills splendidly the aims of the state agricultural society in presenting this year a show that will be of high value in educating growers along lines of greater and more economical production.

Some keen contests will develop in a number of the classes that will face Judge Scribner, and from present indications a fair share of honors will be carried away by exhibitors making their first apearance at this fair.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.
Unsigned communications receive no attention.

Lumps Under Throat

I have three cows with lumps under their throats. When the lumps first form they are as large as an orange and swing loosely under the windpipe. After a month or two they break and discharge a little matter but do not go away, a good-sized lump remaining. Is it caused by eating "broncho" grass? Would it be any use to have them lanced? I have been told that lancing them and then injecting iodine would cure them.—Subscriber, Carlsbad.

Lumps under the skin such as you describe are usually caused by the skin being punctured by a thorn and a piece of the thorn breaking off inside. Yes, open them and do not cut too small a hole. Split them wide open lengthwise of the animal. Wet the inside once a day for a week with tincture of iodine or a solution of permanganate of potash, a spoon to the pint of water.

Cow Fails to Breed

I have a young Jersey cow that had just one calf, that is perfectly healthy and in fine condition, but seems to be hard to get with calf again. Bred her three times to one bull and twice to another, but she came in heat again. Could a good veterinarian tell the trouble by examination?—Subscriber, San Fernando.

It may be that she is too fat and has too little exercise, or she may have tuberculosis. When they first get tuberculosis they sometimes get fat and fail to breed, but because she is fat and fails to breed is no sign that she has tuberculosis. Do not breed her for two or three months. Reduce her flesh by feeding sparingly and put a teaspoon of sulphate of iron in the feed once a day for three weeks. Then when she comes in heat drive her about ten miles to get her well warmed up and after resting for an hour breed her. This will often get the desired results. Also have her tested for tuberculosis if you can.

LEAVE COAL—TAKE SACKS

Disregard of the order instructing coal dealers not to leave sacks with consumers, made effective March 18, led to the announcement today by State Fuel Administrator Schwabacher that violation hereafter will incur penalties prescribed in the Lever act, which is a fine of $5,000 or two years' imprisonment, or both. Notice to this effect has been sent to all retail and wholesale coal dealers in California.

The storage of coal, charcoal or wood fuel in sacks is a wasteful practice and must be discontinued, Schwabacher says. Sacks, now in the hands of consumers, which are the property of dealers, should be immediately returned. Only when coal, wood or charcoal is shipped by transportation companies can sacks be used, the order declares.

An order prohibiting the forking or screening of coal by retail dealers in California on or after September 1st, in the interest of economy has been issued.

Dispersal Sale

W. H. Ginn & Son Herd

100 Registered 100

Holsteins

On Their Farm
Corcoran, California
Thursday, October 10, 1918

This herd is composed of mostly young animals of choice breeding and uniformly good type.

The bred females are in calf to

Aralia De Kol Pontiac Salambo

whose three nearest dams average over 30 pounds butter in seven days, over 1000 pounds in one year. He is sired by a son of Aralia De Kol and out of a daughter of King Mead of Riverside.

Every animal guaranteed to be a breeder, tuberculin tested and sold subject to retest by the buyer.

Management
California Breeders Sales and Pedigree Company
J. M. Henderson, Jr., President C. L. Hughes, Sales Manager
Sacramento, California.
Auctioneers: Col. Ben. A. Rhoades; Harold B. Rhoades

CALIFORNIA CHAMPION HAMPSHIRES

As good as the best and better than the rest. A boar or a sow pig sired by my great herd boar Director, and out of one of my choice sows will add prestige to your herd. I am booking orders now for the pigs of March and April farrow. Write now and place your order.

L. A. DENKER
Boquet Canyon Saugus, Cal.

Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, $2145 cash awards. Write to

M. Bassett
Hanford, Kings County, Cal.

Sir Aaggie De Kol Acme 2nd

Five of his seven nearest dams average:
Milk one year....24,089.88 pounds
Butter ..... 1,105.07 pounds
This butter average is equalled by only one other bull of service age in the world. Buy your next bull from

Eldorado Herd
Alex. Whaley, Owner Tulare, Cal.

Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 426982, grand champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Building
San Francisco

CARRUTHERS FARMS
Mayfield, Cal.

Creamcup Holsteins Headed by the 33.92 pound bull Creamcup Champion Pontiac Burke. A few young bulls for sale. M. M. HOLDRIDGE, Rt. A, Box 437, San Jose, Cal.

PURE BRED REGIST'D HOLSTEINS

Tuberculin Tested State Supervision Individuality Production Butter Fat Everything Guaranteed Breeding

King Korndyke Pontiac

(shown above)

is getting just the sort of calves that we want in our herds, beautiful individuals, nicely marked, and a very large percentage of them are heifers.

Most everyone knows that he is a son of the great and only King of the Pontiacs, but have you stopped to consider what his sisters are doing right here in California? One of them, K. P. Tola Joe, holds the state record for a senior two year old with 27.18 pounds butter in seven days; another, K. P. Idyl Segis, has just broken the state junior four year old record with a production of 35.78 pounds butter in seven days; another, K. P. Tola, made over 34 pounds butter in seven days as a senior four year old; and K. P. Tola Joe came back as a senior three with over 32 pounds butter in seven days.

Why not put a choice young son of King Korndyke Pontiac at the head of your herd? One of his sons sold for $6500.00 at public auction showing the value that the best breeders place on this blood.

We are pricing his young sons at figures that dairymen can well afford to pay, and you will be pleased with the liberal terms we make. Visit the farm or write us now.

Below is our other great herd sire

Prince Gelsche Walker Korndyke

JANE GARDEN FARM

SACRAMENTO — CALIF.

FRED W. KIESEL, PROP'R. C. W. YOUNG, SUP'T.

How Do You Like Him?

The illustration is an untouched photograph of

King Korndyke Pontiac 20th

just as he looks today, and if you agree with the many good judges who have seen him lately, you will pronounce him a wonderfully good individual that is getting better every day.

He looks a great deal bigger to us than the $6500.00 we paid for him last December. You will begin to hear from some of his sisters soon, daughters of King Korndyke Pontiac, and everyone knows that his dam, Miss Valley Mead De Kol Walker, is one of the greatest heifers of the breed.

Why not breed your best cow or heifer to King Korndyke Pontiac 20th now, while you have the opportunity? Later on he will be needed for the exclusive service of our own females.

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THE present very urgent demand for leather as a war necessity and the increase in price which unscored hides bring on the market emphasizes the importance and even necessity of exercising the utmost care in removing skins from farm animals. By devoting a little extra time necessary in skinning animals carefully—possibly only three to five minutes in taking off the skin of a calf, or 15 minutes in the case of a beef hide—the value of the hide may be increased several times. The tanner pays more for packers' hides than for those obtained from farmers or country slaughterers. This is due in part to better facilities in the large packing houses for curing and storage of hides, but principally to the fact that such hides have been taken off properly. Country hides removed by unskilled workmen are often cut and scored. When such hides come from a tannery scores show very plainly, and in many cases one-half of the thickness of the leather is lost by such defects. Imperfections can be avoided by the careful use of the skinning knife, by keeping the hides clean and free from blood and by proper storage and packing.

The use of the knife may be avoided in taking off calfskins, except on the head, neck, legs, and flanks, as the body skin may be drawn or fisted off. Where the knife is used the skin should be drawn taut with one hand while the knife is used with the other, special care being taken to hold the back of the blade close to the skin. In lieu of the knife some butchers use a wooden stick shaped like a man's thumb and employ a knife only on the portions of the body mentioned.

It is objectionable to have blood on the hides, particularly in the summer time, as it is likely to cause the hair to slip from rotting or decomposition when the hides are packed and the placing of otherwise good hides in the No. 2 grade on the market.

Care should be taken to avoid placing any hides in the pack until they are free from animal heat. Allow them to lie folded for from three to five hours, or sufficiently long to allow the animal heat to get out of them. If this is not done patches of decomposition may result and such hides are often reduced in market value at least a cent or more a pound.

In building up a pack of hides the outer edges should be kept a little higher than the middle, so that the liquid or brine formed by the dissolving of the salt in the natural moisture of the hides may be absorbed by them. If the pack is low on one side, or is built slanting like a shed roof, the brine will seep out, causing the hides to shrink in weight. Use salt that has been screened and is free from large lumps and dirt. Dirty salt will stain the fresh side of hides. One pound of salt to each pound of the hide is the general rule. Hides should remain in pack from 15 to 30 days and stored in cool (60 to 65 degrees Fahrenheit) cellars from which the outside air is excluded.

BASIS FOR GREATER CHEESE INDUSTRY

New regulations lately issued by the United States food administration provide for the grading and sale of foreign type cheese of American manufacture on a basis of actual cost plus a reasonable profit.

In its conferences with producers and cheese makers, the Food Administration learned that milk used in certain varieties of cheese was paid for at a lower rate than practically the same quality of milk used in other varieties. Other inequalities resulting from custom likewise appeared during the discussions.

The regulations adopted and now in force are in addition to those recently promulgated affecting the American or cheddar cheese industry and include such foreign types as Swiss, brick, limburger and Munster. There appears to be no logical reason why more extended manufacture of all these types cannot be fostered in this country, thus providing a plentiful variety to satisfy every taste and at the same time furnishing suitable outlets for surplus milk during the seasons of heavy production.

Certain provisions in the rules are expected to be of great benefit in raising the standard of quality of some of the foreign types, such as round

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Swiss, which have been in large demand since the war cut off imports of these types. Improvement in the quality of American made cheese of foreign types should help the industry to meet the competition that is sure to return with the end of the war.

Although under the new regulations margins of profit are liberal enough to take care of cases in which the cost of doing business is unusually high, the rules governing cheese transactions are very explicit and provide that the prices charged by any dealer must not in any case be more than sufficient to return to him a reasonable profit on his investment. As a further measure of control, full reports on costs, margins or prices during any given period must be furnished on demand of the food administration or the federal food administrator for the state.

DUROCS TO SOUTH AMERICA

By Robert J. Evans

The largest sale ever made in Duroc Jerseys, either publicly or privately, was made by a Missouri farm recently, when they sold more than 200 head to the department of agriculture of Brazil. This is reported the largest transaction ever recorded in the pure bred swine industry, not only in numbers sold, but in dollars and cents. A representative of the Brazilian department visited this country and made the selections, with the assistance of Mr. Long's manager, C. J. Tucker. One hundred and sixty of these pigs are now on the way south, and the balance will go on first available shipping space. Seventy-four males and 152 females are in the transaction. They are from four to six months old, and average about 95 pounds. They are to be used as foundation stock to improve the swine herds of Brazil.

In a personal letter to the writer, Benjamin H. Hunnicutt of Sao Paulo, Brazil, who is in charge of the mission and farm at Lavras, Minas, Brazil, and who has bought several Durocs from the leading herds of this country, says: "We are anxiously awaiting the arrival of the Durocs bought by our government in the United States. They will go like hot cakes."

Brazil alone contains more than three and a quarter mililons of square miles, much, of course, not adapted to crop or live stock growing, but a territory much larger than the mind of man can grasp is readily adaptable to live stock growing. This record shipment will doubtless be only a minute beginning of others to follow in regular succession when shipping facilities become normal.

LARGE RECEIPTS OF LIGHT CATTLE

Following a recent conference between packers and federal officials maximum prices are announced at which beef will be allotted for September delivery, excepting on the Pacific coast, for the army, navy and Allies.

The following bases are f. o .b. Chicago, per 100 pounds, for steers of quality and grade satisfactory to the authorized inspectors, chilled and unwrapped. These prices average substantially the same as for the month of August.

475 to 575 pounds	$21.90
575 to 700 pounds	22.65
700 to 850 pounds	23.55

The average weight of cattle marketed this year, it was brought out, is 30 pounds lighter than last, 40 pounds lighter than in 1916 and 60 pounds below the 1915 average. This is due in part to excessive marketing of immature cattle owing to drouth conditions.

To utilize cattle below 475 pounds in weight, the minimum now being supplied on army specifications, housewives and proprietors of public eating places are asked by the food administration to buy cuts from lighter weight stock.

CALIFORNIA INTERNATIONAL

The first annual exhibition of the California International Livestock Corporation is announced in its premium list which is now being mailed by the management. The show will be held at 12th and Market Streets, San Francisco, November 2-10.

Only the workers, "comrades in this great enterprise," bear the honored name—Americans.

Why the cost of producing cattle does not determine their selling price

TO produce a steer for meat purposes requires, as you know, a period of from one to three years.

The prices the producer has to pay for feed, labor and other items during this period, together with weather conditions, determine what it costs to produce the steer.

But the price the producer receives for the steer depends on conditions existing at the time it is sent to market.

If the supply of cattle coming on the market at this time is greater than the consumer demand for dressed meat, the prices of meat and live stock go down.

On the other hand, if the number of cattle coming to market is less than enough to supply the consumer demand for meat, the prices of meat and live stock go up.

Not only do the receipts of animals vary from week to week but the consumer demand for meat also fluctuates.

The rise and fall of prices results from an economic law that operates in every business. It is the packer's task to turn live stock into dressed meat and by-products, and distribute them to the consumer under control of this law.

Market conditions and competition establish the prices the producer gets for his cattle. When meat prices go up or down, so do cattle prices.

The packer can't pay out more money for animals than he takes in from the sale of meat and by-products.

Swift & Company will gladly co-operate in the carrying out of any national policy that will tend to steady the prices of live stock and meat.

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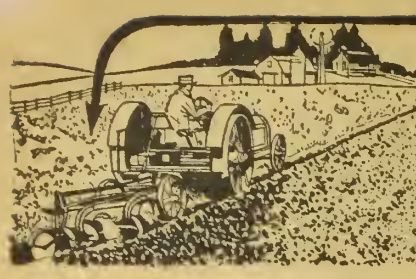

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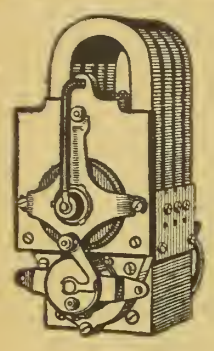

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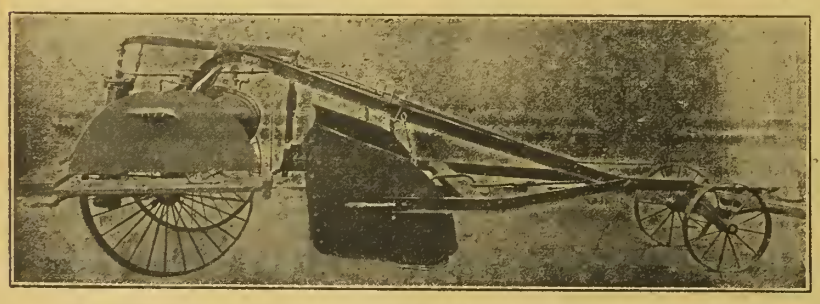

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Weed Out the Slackers

Written for California Cultivator By Jean A. Koethen

FROM the first of August on through September and October the most important work the poultryman has to do is to get rid of the hens that are not worth keeping through winter. If he uses trapnests culling will be easy, for while the trapnest testifies only to what a layer has done, past performance gives a pretty good line on future possibilities. Cases have been known where a hen did considerably better in her second year than in her first, but these are so rare that we are justified in concluding that a hen that barely pays for her keep the first year will be a dead loss in the second.

For culling without the aid of trapnests two tests are generally recommended, the color test which has been given considerable prominence of late in the poultry press, and the molting test which is more easily applied and amounts to about the same thing. The hen that is ragged and faded in October is always a late molter.

E. L. Kempster of the Missouri station has gone on record with this statement: "A hen which selects a new coat of plumage before October 1 is unpatriotic and a slacker. She should be condemned and executed. The early molter is a loafer, while the late molter is a heavy layer. Hens rarely lay and molt at the same time and an early molter has gone on a strike before she should. The poultryman will do well to rid his flock of this kind."

While Mr. Kempster's view is in the main correct, it should not be swallowed whole. Among Leghorns it is quite generally true that a hen stops laying while she molts. Among the heavy hens, which carry considerable surplus fat in their bodies, it is not unusual for one to lay right through the molt. While I kept Buff Orpingtons I noticed a good many such, and this summer I have been watching a Light Brahma do the same thing. She began dropping feathers early in July, and I said, "We must eat her." But her comb was red and full and she kept up a persistent singing as if to allay any suspicion on my part. I knew she went on nest regularly, and an examination of her pelvic bones, which were soft and unusually wide apart, convinced me she was laying. Now she is fully feathered out, and as far as I can judge from the production of the pen, which is exceptionally good for August, has never stopped doing her bit. Had we accepted Mr. Kempster's sweeping condemnation, we might have sacrificed one of our best layers.

The secret of the laying of these heavy hens through the molt is suggested in this quotation from the report of the Cornell committee on judging fowls: "A laying fowl uses up the surplus fat in the body, especially from the skin. In yellow skinned breeds this loss of fat can be readily seen by the loss of the yellow color. The different parts of the body become white according to the amount of fat stored in the body and the amount of circulation of blood through that part." If we follow this principle to its ultimate conclusion we must conclude that while it is possible for a hen to be so fat she cannot molt it is also possible for her, if she has the right amount of fat in her body, not only to molt but to manufacture eggs while she molts. Such cases may be comparatively rare, but I have seen so many in my small flock I am sure they must aggregate quite a large class.

Then there is the hen that rears a brood in late spring. How does this influence the molt? I have seen an Orpington hen that reared her brood in June go through an early molt in July and then lay steadily through the rest of the summer and fall. More often the hen that has had the rest and recuperation of hatching and brooding in the spring lays on without molting till late in the fall. If I could do as I like, I would set every hen on the place in May because I am so confident of the recuperative effect of hatching. We are told that while Leghorns are often productive three years heavy hens should be sent to the butcher at the end of the second, and this again is only a half truth. The heavy hen that is allowed to hatch every season should, if she is not permitted to get overfat, last longer than a Leghorn. Overfatness is, however a difficult thing to control.

These overfat hens should receive careful attention at culling time. The best thing that can be done with some of them is to eat them or can what you can't eat. Others may perhaps be reduced by cutting down the ration and giving all possible range. But no fat hen should be kept unless she can be reduced. She will go on eating long after she has ceased to lay. To be sure, there is no excuse for a hen's being overfat these days. It is unpatriotic, to say the least. But some hens, like some people, stay fat no matter how much they Hooverize. For such there is but one cure.

In looking over the flock, then, in September, let us weed out:

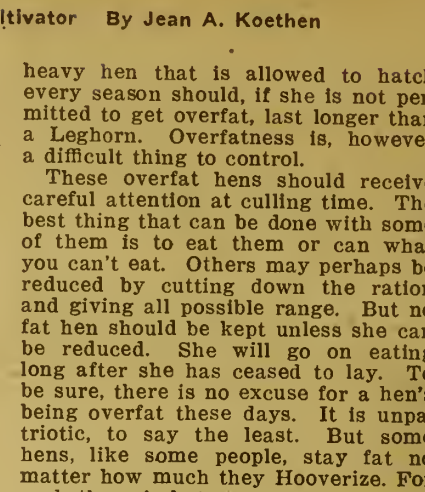
1. The early molter. That is, unless her comb, pelvic bones and behavior indicate positively that she is laying.

2. The overfat hen. Put her by herself and give her a chance to be good. If she still persists in being overfat, 'raus mit her.

3. The old hen. Dr. Woods says that under present conditions only breeders should be kept past the second year. It would be better to say, "Keep only the exceptional hen longer than two years" for a hen in her second year is a perfectly good breeder.

4. Any hen that is lacking in vigor or not fully up to the average of the flock.

In October or November we can cull by color, weeding out the hens that are glossy in plumage and yellow in shank and about the eye and vent. They are the hens that have been dressmaking instead of laying, unless they happen to be the exception that does both at once. But the wise poultryman, let us bear in mind, is the one who culls all the time. Helen Dow Whitaker, in her report of the All-Northwest Egg Laying contest says: "There are few flocks which will prove profitable unless they are culled," and this is the conclusion to which all thoughtful poultry people have come. Not only should the yearlings be culled, but the pullets from the start should be subject to the most rigid selection.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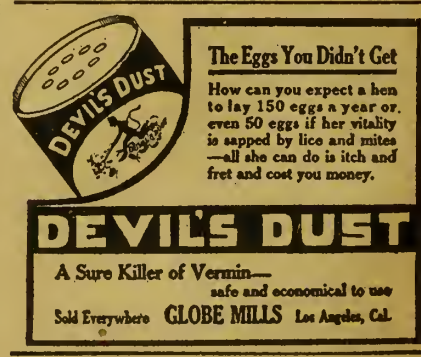
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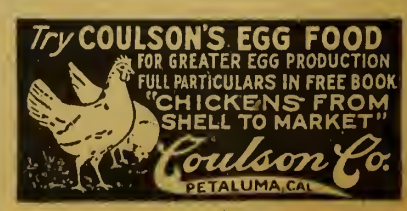

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For Sale—Forty acre ranch seven miles from Modesto, Stanislaus County on main highway, paved to within one-four miles. Thirty-five and half acres fine alfalfa, one and half to be planted this season, two acres mixed bearing orchard. One acre buildings and corrals. Dairy barn for forty cows, separator room, etc. All complying with new dairy laws. House, barn for five horses, calf shed, etc. On main irrigation lateral. Very near modern school. Fine drinking water. One-third cash, balance long term seven per cent mortgage. Deal with owner. No agents. Will be glad to have friends show intending buyers the ranch. Write Carl G. Meiners, Meiners Rancho, Ojai, Ventura County, California.

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Plows, Spike, Disc, Harrows, Cultivators. Single, Double Disc Cultivators; one, two, four gang disc plows; one Stockton; 20 Chicken feeders, $2.50, cost $6; tons pipe fittings, all sizes, L's, T's, Gate Check Valves to 8-in.
Pumps — Pumps
2-in. vert., 4-in. 2 Stage B. & J., No. 6 Gould Horizontal, $125; 7-in. Krogh Vert. See Who's cheapest. Office DEMMITT CO., 120 No. Main, upstairs, Los Angeles. 15191, also buy good material.

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All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.
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MISCELLANEOUS

Farm Letterheads at Very Small Cost—Like every farmer needs. Printed with your specially designed name, a view of your farm, live stock, poultry or agricultural products. Why be without attractive letterheads like up-to-date farmers are using when they can be had so cheaply? Write for samples. Frank E. Brown, 1377 Palm Terrace, Pasadena, California.

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Wanted — Position as Manager irrigated farm, orchard, nursery, park property. Thoroughly experienced these lines, California and other semi-tropics. Harvey C. Stiles, Cultivator Office.

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A few fall boars left by Royal Superbus—also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
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Escalon, San Joaquin County, California.

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For Sale—Mated Homer pigeons, 6 pairs, also canary singers. E. A. McKinley, R. D., Ukiah.

CATTLE

Guernseys—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsev Farm, Yountville, Napa Co., California.

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J. R. CARHART, FULLERTON, CAL.

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Fall Chicks For Sale—400,000 S. C. White Leghorn chicks from free range Hoganized stock only, for delivery from July to December, at very reasonable prices. Fall chicks are most profitable—broilers in ten weeks, pullets lay at five months. We guarantee safe delivery of all chicks to destination. Shipped safely anywhere West of the Rockies. No money in advance, pay on delivery. Special prices on 500 and 1000 lots. Finest hatchery in the world. Established over twenty years. Further information write Must Hatch Incubator Company, 424 Seventh Street, Petaluma, California.

Feed High; Eggs, Meat Higher! Our 200-290 egg Leghorns, Anconas, Reds, Rocks, Wyandottes, Minorcas, ducks are more profitable now, clearing $5.00. Some greatest government trapnested hens, 280-283. Hundreds breeders, laying, younger pullets; thousands chicks weekly; reasonable, fine males $1.00 up, worth treble. James Beeson, Pasadena, California.

White Leghorn Baby Chicks—Put in a lot of baby chicks this fall. Help out the food situation. Make some money, buy some Liberty Bonds, give the hatchery man a chance to buy some bonds also. We guarantee our chicks to be first class. Lyon Hatchery, Gardena, one-quarter mile east of harbor boulevard on Palm Avenue.

"Eastman's Bred-to-lay" Hoganized and trapnested Barred Plymouth Rocks. September chicks, eggs, cockerels. Fairmead Poultry Farm, Fairmead, California.

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They do not look back at us. They trust us, behind their backs, to do our part.

Our part is to work for war and not for self. Force, force to the uttermost, for them. Work, work to the uttermost, for us.—Dr. Alonzo Taylor, United States Food Administration.

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The Best Player Value
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To those that can't play but want so much to play the Piano—what a blessing is the Player! But the higher types of Player instruments are often beyond the reach of the average pocketbook. This is where the Aeolian Player Piano fills a great need—it is a good substantial instrument yet moderate in price.

The Aeolian Player Piano does not depend on any single sensational feature to command attention—its excellence is due to a well balanced perfection throughout. It is a product of the Aeolian Company, makers of the famous Pianola and the wonderful Duo Art.

We will gladly arrange convenient terms if desired

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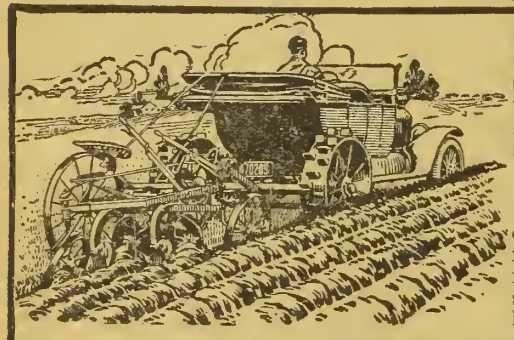

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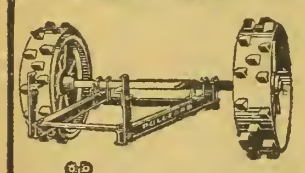

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It was the Pullford attached to Ford cars pulling two 12-inch plows running on Kerosene, equipped with new fan device, that made a most successful demonstration at Fremont, Nebraska.

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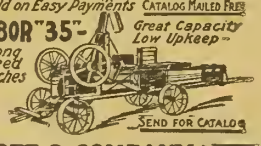

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100,000 feet New and Second-hand Pipe and Casing.

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Casing—3, 3¼, 3½, 4, 4¼, 4½, 5, 5½, 6, 8, 10, 11, 12, 14 inch; 2000 feet 6⅝-inch 20-lb. tan thread.

Riveted Pipe—4, 6, 8, 10, 12, 14, 16, 18 inch.

All above pipe and casing is practically as good as new, with good threads and couplings on each joint. We also carry valves and fittings, pumps, engines, boilers and rail. See our stock and get prices before buying elsewhere.

ADAMS PIPE WORKS

Bay and Mateo Sts., Los Angeles, Cal.
Phones: F 1917; Bdwy. 1264.

22 POT BULBS, 10c.

3 New Purity Freesia, 3 Babiana, 3 Double Rosebud, 3 Buttercup and 10 Grand Duchess Oxalis; will bloom all winter. The 22 Bulbs, Booklet on Bulb Culture and Catalog, *All Mailed for 10 cents.*

Hyacinths, Tulips, Narcissus, Peonies, Lilies, Irises, Phloxes, Hardy Plants, Shrubs, Vines, Berries, in great variety. Also splendid window plants for winter. Seeds for Fall sowing, etc. Beautiful catalog free.

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Household Department

THE SPEED BUG

When first I bought a motor car,
My mental status stood at par,
I had a sane, unquenched thirst
For axioms of Safety First.
No mad impulse arose to plead
That I indulge in bursts of speed,
But leisurely I journeyed then,
Exhaling peace, good will to men.

And when behind me siren notes
Announced accelerated boats,
I modestly gave way until
They passed and vanished o'er the hill.
Sardonic grins, their gibes and jeers,
Met shielded eyes and cottoned ears,
The while I slowly shook my head
And ruminated on the dead.

But scarce a month had spent its range
Ere I had undergone a change.
My reason faded, phantom-like,
And I was burning up the pike.
No placid gait consoles me now,
No docile rate the laws allow,
And when some driver tries to pass,
I open up and give her gas.

A deep respect for Safety First
Attends the miles in haste traversed,
But while my folly I deplore,
I know slow jaunts will serve no more.
So every motorist betrays
The sanity of early days,
The speed bug bites him on the pate
And he must needs accelerate.

—John B. Terns in Milestones.

CUPID, 1st; SAFTEY, 2d; TIME, :00¼

By Hugh S. Fullerton in Milestones

FERDIE MAYPOLE hated reckless automobile drivers, persons who laughed boisterously and used slang, persons with reddish hair and freckled faces, persons who really did not belong in the Clifton "set," and he loved Katherine (called "Betty" in that "set") La Clain. Jack McClurg hated no one, although professing contempt for persons who inherited much money, were too proper in dress, and who were afraid to drive a motor car faster than twenty miles an hour. Also he was desperately in love with Betty La Clain.

The enumeration of the likes and dislikes of the two really is unnecessary when it is understood that the things Ferdie hated were personified in Jack, and the qualities scorned by Jack were those which marked Ferdie as a man apart in the "set." Neither should it be necessary to explain further, that both loved Betty La Clain to make it understood why they should detect within themselves such violent antipathies.

Neither had evinced any particular feeling toward these qualities until it became evident in the "set" (it never was spoken of in any other way in Clifton) that each suddenly had discovered himself madly in love with Betty.

As for Betty herself, she adored fast automobiles, simply doted upon red-headed men, respected money, was perfectly mad over men who dressed well, and admired a man who obeyed the speed laws. She said all these things—which, far from satisfying either Ferdie or Jack, served only to aggravate their likes and dislikes.

The morning after Betty had spoken approval of those who are careful in operating their motor cars, and who obey the speed regulations, Ferdie called for her in his newest touring car. The fact that when he arrived Betty was arrayed in the motoring costume which only had been delivered late the preceding evening is not legal proof that she had hinted. As she gurgled into his ear several hours later, they had a perfectly gorgeous and completely scrumptious drive, and the cunningest and most scrumptious luncheon she ever had tasted in her whole life. Betty used italics at intervals through all her conversation. Ferdie drove downtown comforted for having lost the better part of the business day by her statement that she felt so safe with him because he was so careful.

It may or may not have been coincidence that, before Betty had the opportunity to change her costume, Jack's car slid to a screeching stop in front of her home and he honked the horn four times before she appeared.

"Hop in," he invited. "Let's step out and see what the birdies are do-40 miles up the river. There is a guy up that way I want to make take down a sign. He says 'Slow down to 60 miles.'" ¼

"I have just returned from a drive with Mr. Maypole," said Betty.

"Climb aboard," replied Jack, grinning. "A ride will do you good after a funeral."

Jack's car consisted chiefly of engine and tires. There was space enough between engine and tank for two persons to sit.

"You needn't look at the landscape for the first ten miles," remarked Jack. "You saw that today and there is a motorcycle cop who needs a pace-maker."

They went to where they were going, and were half way back when they passed the motorcycle policeman who had pursued them. Jack was elated when Betty assisted him in jeering at the farmer who dared place the sarcastic signboard at such a perfect piece of road. It was within a few moments after Betty had stated that she had had a perfectly heavenly drive that Jack's car overtook a car coming toward them. At least that is the way Jack expressed it, for, although the other car was proceeding Cliftonward at 20 miles an hour, it seemed to be backing up. Jack opened up his muffler, pressed the siren with his nose and went past the other car at a moderate 60, taking half the ditch as he went. In that instantaneous glimpse they saw that Ferdie was propelling the ash-cart, as Jack called it, and, worse, Ferdie recognized the occupants of that blue streak.

That really was the beginning of the likes and dislikes set forth earlier. Jack and Ferdie met at the garage. Their status in that establishment may be judged from the fact that the mechanician always touched his cap to Ferdie, and said: "Your car is ready, Mr. Maypole," while in addressing Jack he said: "Some job, Jack—some fast junk pile." The mode of address indicates the social elasticity of each.

"I'll buy you something wet," suggested Jack.

"Thanks,— I'm on the wagon," replied Ferdie.

"I thought you might need a quart or two of something to wash the dust out of your mouth," countered Jack, grining suggestively.

"I prefer a little dust to ditch mud," retorted Ferdie.

The retort stung, for it conveyed to Jack the fact that one, at least, in the "set" knew that his machine had been towed in ignominy from a muddy ditch during the preceding week.

"Were you running in reverse when I passed you?" queried Jack belligerently.

"No, I was saving a hundred and ten dollars by obeying the law," replied Ferdie, smiling savagely.

The final retort amounted to open declaration of a state of war. Until the words were uttered Jack supposed he had succeeded in concealing from everyone in the "set' 'the fact that he had been trapped at Milford, haled before a country justice and compelled to leave his watch and rings as security for the fine.

"When I hear these fellows talking Safety First," said Jack, addressing the garage man, "I usually conclude that they lack the nerve to go faster than 15 an hour."

The garage man, being diplomatically considerate of the fact that, while Jack's gas bill was the larger, Ferdie's account for washing and polishing more than offset it, remained silent until Ferdie walked out, then said: "Yeh bo, y' said somethin' that time."

Within a week everyone in the Clifton "set" understood that there was a coolness between Jack and Ferdie, and no Sherlockian instinct was needed for the majority opinion to reach the conclusion that Betty La Clain was involved. This conclusion was strengthened by the fact that Betty was seen alternately riding in reposeful comfort in Ferdie's car and scuttering along the horizon clinging to the platform between engine and tank of Jack's disreputable appearing machine.

On several occasions they passed each other on the road; rather, Jack did the passing. On such occasions as Jack was alone during this procedure, he grinned invitingly as he bolted toward the horizon. On occasions on which Betty sat beside him, he leered triumphantly and laughed. On two occasions he pretented to be examining his engine until Ferdie had passed, thus securing a second opportunity for triumphant grinning. On several other occasions it was painfully evident to Ferdie that Jack was

making a deliberate effort to lure him into a test of speed, challenging him to race by such tactics as holding the road at 12 miles an hour until Ferdie approached and forcing him either to attempt a passage or to accept the gait. Ferdie ignored these attempts and refused to alter his speed even a fraction of a second. Time and again he passed the low, dust-covered car, only to be smothered a minute or two later in a cloud of dust as he courteously yielded the road to the insistent honking of the pursuing horn.

Ferdie's jaw protruded a trifle more and his lips set themselves in a straighter line on such occasions, otherwise he maintained imperturbable countenance. True, his bow in return to the smile and the gay hand wave of Betty was a trifle chillier than his inward temperature appeared to justify.

Having failed to draw his rival by such methods, Jack resorted to an aggressive offensive, both during their chance meetings at social affairs and almost daily encounters at the garage. Ferdie was conscious that he was losing ground at all points. The garage man departed from his diplomatic attitude far enough to grin approvingly at Jack's jibes aimed at Ferdie's car.

The balm to Ferdie was that, up to a certain point in midsummer, Betty maintained anl attitude of remarkable neutrality. Each time that she rode with Ferdie she declared she had a perfectly gorgeous time, save on those occasions when she declared she had a perfectly gorgeous time, and the syllabetic accentuation carried convincingosity to Fredie, at least so long as the memory of the smile that accompanied it remained. It was in a midsummer drive that the blow fell. Never once during the numerous drives had the subject of speed been broached, Betty being amazingly diplomatic in some matters, and inclined to avoid afar off rather than evade at close range.

The subject arose during the homeward drive.

"Are you in a hurry to get back?" inquired Ferdie innocently, observing a trace of restlessness.

"No," she replied, "but a little motion might make it seem cooler."

They were going 21 then—one mile above Ferdie's maximum, and he flushed.

"Very well," he said tersely.

(Continued next week.)

HOUSEHOLD QUERIES

Substitutes for Sugar

Will you please tell me what substitute to use in ice cream in place of sugar? Honey is so high and furthermore I don't think that flavor would be very good in cream. In the part that I cook I add white karo syrup, which may be of benefit to some one else, but in the remainder I use sugar, and under present circumstances I cannot. Also what substitute can be used instead of sugar in cocoa? — Subscriber, Delano.

Does anybody know of any other substitute for sugar than honey, corn and sorghum syrups? Of course there is maple sugar, and lately in some places corn sugar has been obtainable. (This latter is not so sweet as cane or beet sugar). Honey is delicious in ice cream. In fact, many ice cream makers built up a reputation for the excellence of their product, before we ever thought of economizing on sugar, by advertising that their ice cream was made with honey. Of course the high price will keep it from being generally used. If any of our housekeepers have suggestions to offer, we will be glad to hear from them and will give a six months' extension of subscription for any suggestions published.

THE SLACKER'S PRAYER

Call out the army and the navy,
Call out the rank and file,
Call out the brave old veterans,
They'll face danger with a smile.
Where are the boys of the old brigade
That set old U. S. free?
Call out my mother, my sister, my brother,
But for God's sake don't call me.
—Exchange.

The nation's standard in clothes of moderate price

Styleplus are the only clothes in America identified each season at nationally known prices.

Each Styleplus grade is one price the nation over.

We center our volume on a few grades—cut down the expense of manufacturing—this is the reason behind the famous Styleplus quality.

No matter where,—no matter when—you buy Styleplus Clothes you *know* they are right in style, in wear, and in price.

Go to the Styleplus Store and see for yourself. Try on the clothes. Get exactly the kind that suits your build and your taste—that fit right and look well.

When you see your clothes before you buy them you know what you are getting. Buy Styleplus and you will always be sure of the big value at a moderate price.

Two grades in Styleplus suits: $25 and $30.

Three grades in Styleplus overcoats: $25, $30 and $35.

Sold by one leading clothing merchant in most cities and towns. Write us (Dept. AB) for Styleplus booklet and name of local dealer.

HENRY SONNEBORN & CO., INC.
Founded 1849 Baltimore, Md.

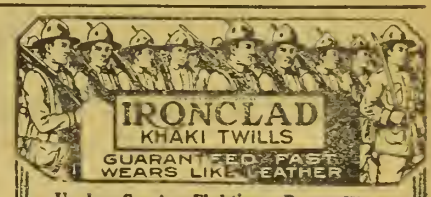
Styleplus Clothes
$25 AND $30
TRADE MARK REGISTERED
"Each grade one price the nation over"

America's only known-priced clothes

The powdered mica in Mica Axle Grease keeps the spindles smooth, resists wear and pressure, and makes the grease last twice as long. Mica Axle Grease would still be good axle grease without the mica. But the mica makes it better. Get a can from your dealer today.

STANDARD OIL COMPANY
(California)

MICA AXLE GREASE



Uncle Sam's Fighting Boys Wear
IRONCLAD KHAKI
Twill Cloth

You men and women of his "home guard" should wear this patriotic economy cloth, too. It's fast color and wears like leather.

SHIRTS, PANTS AND OVERALLS made of the genuine Ironclad Khaki (the kind Uncle Sam uses) carry the yellow "army" label, like the above. LOOK for it in the garment before you buy.

Write today for free samples of Ironclad Khaki Cloth, and Miss Ironclad Khaki, the kid glove finish ladies' overall cloth.

Garments on sale by dealers—everywhere

FRANKLIN MANUFACTURING CO.
Manufacturers of Cloth Only
123 Market Place - Baltimore, Md.

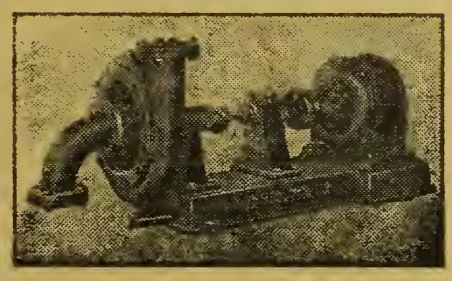
Krogh Manufacturing Company

206 No. Los Angeles St.
Los Angeles, Cal.

147-159 Beale St.
San Francisco, Cal.

Krogh Pumps are Absolutely Water Balanced
No End Thrust Possible No Set Collars Used

THE NO TROUBLE PUMP



Krogh Direct Motor Driven Pump

Fitted with Ring Oiling Bearings

Renewable Babbitted Bushings

Ring Oiling Gland

We also build deep well turbines, deep well plungers, horizontal and vertical pumps for mining, irrigation, drainage.

Save 1-2 on Fuel

CHEAPEST HEAT YOU CAN BUY

The Sievert Oil Burner burns distillate costing only 5½ cents per gallon in cook stoves, heaters, furnaces, pasteurizers, boilers, etc. Absolutely safe, odorless, very convenient and low priced. MAKES HEAT AT HALF WHAT WOOD AND COAL COSTS. Install it yourself. Write for circular and prices on different sizes, address Sievert Oil Burner Co., 710 North Main St., Los Angeles.

You should have your Soils, Fertilizers and Waters Analyzed by
Mark Walker, B. S.
211 West First St. Los Angeles, Cal.

Shotguns and Shotshells
for Shooting Right

GETTING the bulge on your year's work means a lot—a lot more if you love dog and gun. By getting yourself in trim with the *right* amount and kind of recreation, you will tackle next year's work with more vim.

There is much additional satisfaction in store for you if you buy a Remington UMC Pump Gun or Autoloading Shotgun for your days off this Fall. When your well earned chance comes to bag some game, you will then have in your hands a gun made to shoot *right*. Guns of the same design helped win the Grand Prize, highest of possible honors, "For Modern Firearms and Ammunition," awarded to Remington UMC at the San Francisco Exposition.

The wonderful Wetproof process invented for and exclusively used in the manufacture of Remington UMC Smokeless "Arrow" and "Nitro Club" Steel Lined Shotshells, has been pronounced the greatest advance in shotshell manufacture in a decade. *These shells as now made are the first completely wetproof shells.* Another Remington UMC contribution to shooting *right*.

In *black powder*, buy the old reliable Remington UMC "New Club," now Wetproof sealed at turnover and top wad.

Sold by Hardware and Sporting Goods Dealers in Your Nearest Town

THE REMINGTON ARMS UNION METALLIC CARTRIDGE CO., Inc.
Largest Manufacturers of Firearms and Ammunition in the World
WOOLWORTH BUILDING NEW YORK CITY

California Liberty Fair
Exposition Park Los Angeles
October 12 to 26, 1918

Live Stock **Agriculture**
Horticulture **Manufactures**

Indorsed by the United States Government
The State of California Chamber of Commerce
Merchants and Manufacturers Association

United States Government War Exhibit
Direct From Washington

War work of our nation to be shown in combined government exhibits.

Food Show *Helpful Hints on Household Habits*
Thousands of Dollars in Premiums
Thirty-Nine Buildings

We invite you to visit Los Angeles and enjoy the

California Liberty Fair, October 12 to 26, 1918

Send for Premium List now ready.

Pico 3776 **Headquarters Central Park** Hill St., bet. 5th & 6th

Los Angeles Market

Los Angeles, September 4, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.
Cal. Extra. Creamery 50

CHEESE

Brokers' prices:
California fresh, lb. 27½

EGGS

Exchange quotations. Prices to retailers 2 to 3 cents higher.
Fresh extras 57
Case Count 53
Pullets 49

POULTRY

We quote to producers.
Broilers .....33@35
Fryers 29
Hens, small, 22@24; heavy 27
Colored 29
Ducks, lb., 20; ducklings .....22@25
Roasters 29
Roosters, old 18
Turkeys .....30@33
Geese 15
Belgian Hares 16
Squabs .....30@35

LIVESTOCK

We quote cwt. f. o. b. L. A.
Corrected Wednesday morning, September 4, by the Cudahy Company.
Cattle—
Beef steers, av. 1000-1100 lbs. 12.00
Heifers, good 9.00
Cows, good 8.50
Veal Calves 10.00
Canners .....5.00@6.00
Hogs —
Av. 150 lbs. 17.50
Av. 175-225 lbs. 18.50
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers 12.50
Ewes 11.50
Lambs 16.00
Yearlings .....11.00@11.50

POTATOES

Wholesale selling prices:
Burbanks .....3.25@3.75
Sweet, lug .....1.25@1.35

ONIONS

Wholesale selling price, cwt.:
Australian Brown, cwt. 2.50
Silverskin .....2.75@3.00
White Globe, lug .....90@1.00

VEGETABLES

Wholesale prices:
Beans—Wax, lb. 8
String 11
Limas, lb. .....5@6
Beets, sk. 2.00
Cabbage, cr. .....3.75@4.00
Carrots, doz. 30
Corn, sugar, bx. .....50@60
Cucumbers, lug. .....45@50
Egg Plant, lug. .....30@90
Horseradish, lb. 15
Lettuce, cr. .....75@80
Leeks 35
Mint, doz. 40
Okra, lb 12
Onions, green, doz. .....25@30
Peas, Tel., lb. .....13@14
Peppers, Chili, bx., 40@50; Bell, lug. 40@50
Parsley, doz. 20
Radish, doz. 30
Rhubarb, C. W. bx., 1.15; Strawberry 1.30
Spinach, doz. 30
Squash — Summer, lug .....40@45
Hubbard, lb. .....1½@2
Crookneck, lug .....40@50
Tomatoes, lug. .....90@1.00
Turnips, doz. .....25@30
Watercress, doz. .....35@40

FRUITS

Wholesale prices:
Apples—W. Astrachan, bx. .....1.75@2.25
Gravenstein .....1.85@3.00
Bellefleurs, bx. .....2.25@2.50
Cantaloupes — Tip Top and Paul Rose, best, 1.25@1.50; cabbage crates. Tip Tops and Pineapples, 3.00@3.25; White Rinds, 3.40@3.25; Casabas, 2.75@3.00.
Crabapples, lug .....1.35@1.40
Figs, lb. .....5@6
Grapes—Lb., Malagas, 3½; Muscats, 3; Liberty, 3; Tokays, 5@6; Black Tokays, 4¼@5; best 4-basket crates, Concords, 1.25.
Nectarines, lb. .....5@6
Peaches — Lovells, lb., 3½@4; Homegrowns, Lovells and Late Crawfords and Strawberry, lugs, best, 1.25@1.35.
Strawberry, lug .....1.50@1.25
Pears—Bartletts, 2.75@3.00 per packed box. Home-grown, varlous varletles, lb., 3@4; Beaumont and Hemet Bartletts, loose, 4@5 lb.
Plums — French Prunes, 5@6; Hungarians, 6½@7. Santa Cruz, Giant, Gros and Grand Duke, 6@6½ lb.
Watermelons, lb. .....½@1¼

CITRUS

Lemons, packed, 6.00@6.50; loose 3.75@4.00
Oranges — Valencias .....7.75@8.50
Grapefruit .....5.00@5.50

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....18@20
Amber extracted 16
Fancy white comb, per case 6.50
Comb lt. amber, per case .....5.00@6.00
Beeswax, lb. .....32@34

HAY

Quotations by Nichols - Loomis Company. Prices to growers f. o. b. L. A.:
Tame Oat .....25.00@27.00
Volunteer Oat .....12.00@14.00
Wheat .....22.00@25.00
Barley .....22.00@25.00
Alfalfa .....18.00@21.00
Quotations furnished by California Alfalfa Growers' Association, Riverside, California.
No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS

See San Francisco market.

San Francisco Markets

San Francisco, September 3, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:
Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.
Dairy Exchange quotations, lb.:
Extras 53
Prime firsts 50½
Firsts 49

CHEESE

Dairy Exchange quotations:
Cal. Flats 31
Cal. Y. Amer. 30
Ore. Y. Am. 27½
Jack Cheese, full cream 28

EGGS

Dairy Exchange quotations:
Extras 63
Selected Pullets 61

POULTRY

We quote to producers, lb.:
Per lb.: Large hens, 35@37; Leghorn hens, 31@32; broilers and fryers, ¾ to 1¼ lbs., 40@43; 1½ lbs., 37@38; 2 lbs., 38; 3 lbs. and over, 35@36; old roosters, 20@21.
Ducks, live, 27@30.
Geese, 22@24.
Belgian hares, live, 15-17.
Squabs, doz., 3.50@4.00.

LIVESTOCK

Prices gross weight:
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.
Steers, lb., 9@11½; thin, 7½@8½; cows and heifers, 6@8; thin, 3½@5½; calves, 8@11.
Sheep—Per lb. gross weight: Unshorn wethers, 11@11½; ewes, 8½@9½; lambs, yearlings, 12@12½; milk, 12@14½.
Hogs—Hard grain fed, weighing 100 to 140 lbs., 17¾; 140 to 300 lbs., 18¼; 300 to 400 lbs., 17¾.

POTATOES

Wholesale selling prices at wharf, cwt.:
River, new, cwt. .....2.30@2.50
Sweets, lb. .....4@4½

ONIONS

Wholesale selling price on wharf, cwt.:
Australian .....1.40@1.65
White, lb. .....2¼@4
Garlic, new, lb. .....12½@15

VEGETABLES

Wholesale selling price:
Beans, String, lb. .....4@5
Limas, lb. .....5@6
Carrots, sk. .....75@85
Corn, green, sk. .....2.50@3.00
Cucumbers, lug .....75@1.00
Pickling, lb. .....4@6
Egg Plant, lug .....65@75
Lettuce, doz. .....15@20
Okra, bx. .....50@60
Onions, green, bx. .....65@75
Peppers, Bell, lug, 50@65; Chili....50@65
Peas, lb. .....7@8
Pumpkins, sk. .....75@1.00
Squash — Summer, lug. .....40@50
Tomatoes, lug. .....50@75

FRESH FRUITS

Apples — Gravenstein .....1.25@2.25
Bellefleur .....1.25@1.75
Avocados, doz. .....5.00@7.00
Bananas, lb. .....6@7
Berries — Ch.: Strawberries, 7.00@8.00; blackberries, 6.00@8.00; raspberries, 10.00 @13.50.
Casabas, cr. 1.50
Crabapples, small bx. .....1.00@1.50
Fig, bx. .....65@1.00
Honey Dew Melons, cr. .....1.50@1.75
Grapes—Cr.: Seedless, 85@1.00; Malaga, 85@1.00; Black Prince, 85@1.00; Tokay, 1.00@1.50; Isabella, 1.25@1.50; lug; Black, 1.50@1.75; Tokay, 1.75@2.00; Muscat, 1.75 @2.00.
Nectarines, cr. .....50@1.00
Peaches, bx. .....1.25@1.50
Pears, Bartlett, bx .....1.50@2.75
Plums — Cr.: Burbank, Satsuma, 75@90; Gros, Kelsey, Japan, Grand Duke, Diamond and Hungarian, 1.00@1.25.
Pineapples, doz. .....4.50@5.00
Watermelon, lb. .....1¼@1½

CITRUS

Lemons, bx. fy., 4.50@6.30; lemonettes, 3.00@4.00; Valencias, 7.50@8.50; grapefruit, 4.00@6.00.

DRIED FRUITS

Raisins: Associated prices 1918 are:
Muscats: Packages seeded, fancy, 36-16s, 9.625; fancy, 48-12s, 7.75; choice, 36-16s, 9.125; choice, 48-12s, 7.375. Bulk seeded: 25-lb. Bakers, 8.00; 25-lb. fancy, 8.85.

Thompson Seedless; packages recleaned, 48-16s to case, 9.90; bulk, recleaned, 36-12s to case, 8.00; package, recleaned, 25-lb. boxes, 9.25. Sulphur bleached — northern stock: Bulk, 25-lb. boxes, choice, 10¼; bulk, 25-lb. boxes, fancy, 10¾; bulk, 25-lb. boxes, extra fancy, 11¼. Soda dipped — northern stock — Bulk, 25-lb. boxes, 10.

Loose: 1-crown, 25 lb. boxes, 8½; 2-crown, 25 lb. boxes, 7½; 3-crown, 25 lb. boxes, 8; 4-crown, 25 lb. boxes, 8¾.

Layers: 3-crown, 20 lb. boxes, 1.85; 3-crown, 20 1-lb. trays to box, 2.00; 4-crown, 20 lb. boxes, 2.10; 6-crown, 20 lb. boxes, 2.95; 3-crown, 10 lb. boxes, 1.05; 4-crown, 10 lb. boxes, 1.20; 6-crown, 10 lb. boxes, 1.65; 3-crown, 5 lb. boxes, .65; 4-crown, 5 lb. boxes, .70; 6-crown, 5 lb. boxes, .90.

Sun-Maid clusters, 20 1-lb. cartons to box, 2.35.

Imperials, 4 5-lb. cartons to box, 3.40.

Vineyard run, 60 lb. boxes, 3.90; 100 lb. boxes, 7.50.

Sultanas. Packages, recleaned, 48-16s to case, 9.65; bulk, recleaned, 25-lb. boxes, 9.00.

Peaches — California Peach Growers

quotes opening prices for 1918 crop f. o. b. factories California. Prices guaranteed to December 31.

Bulk basis and boxes unfaced 1 and 2 cents more.

	Practically Peeled	Yellows (Old style)	Muirs (Old style)
Standard	12⅞c	11¼c	11⅝c
Choice	13⅜c	11¾c	11⅞c
Fancy	14⅜c	12½c	12⅞c
Ex. Fancy	15½c	13¼c	14c
Slabs		10¼c	

Prunes and Apricots. The Prune and Apricot Growers' Association have named following prices on apricots:

Standards	9½
Choice	13
Extra Choice	14½
Fancy	16
Extra Fancy	17½
Extra Moorparks	19
Slabs	11

Cash on delivery price on all grades will be 8 cents with the exception of standards and slabs on which it will be 6 cents.

Prunes: The government will take all the 50-60; 60-70; 70-80 sizes. The quotations sent to the trade last night are as follows:

The bulk prices will be:

Sizes:	Price per lb.
20-30	17
30-40	10¾
40-50	10
50-60	9
60-70	9
70-80	8¾
80-90	8¼
90-100	7¾
100-120	4¾
Above 120	4¼

One cent per pound, and one and one-fourth cents per pound will be added for 50 and 25-lb. boxes.

BEANS

Jobbers' prices, cwt., recleaned:

Limas	13.10@13.25
Bayous	7.75@7.90
Small Whites	Nominal
Large Whites	Nominal
Mexican Reds	7.75@7.90
Blackeyes	6.75@7.00
Pinks	7.00@7.15
Red Kidney	Nominal
Cranberry	Nominal
Teparies	8.00@8.25

HONEY

Jobbers' prices:

White extracted	20@22
Light amber extracted	17@20
Amber extracted	16
White comb, cs.	4.50@6.00
Light amber comb, cs.	3.50@4.00
Beeswax	32@34

HAY

Under date of August 31, Scott, Magner & Miller says:

Receipts past week, 1794 tons. As has been the case for some weeks past, a good portion of this hay arrived by water and considerable of it consisted of alfalfa.

Although these receipts are not heavy for the month of August, at the same time the market is well stocked and has been for some time past. This condition is no doubt caused by the elimination of the horse to a great extent in many lines that formerly depended upon that exclusively.

The government was in the market during the week for some export hay but; other than this, export demand is light.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market — for prices to consumers charges of cartage, commission and handling must be added according to conditions:

Fancy Wheat Hay (large 5 wire bale)	26.00@27.00
No. 1 Wheat or Wheat and Oat Hay	23.00@25.00
No. 2 Wheat or Wheat and Oat Hay	20.00@22.00
Choice Tame Oat Hay	24.00@26.00
Other Tame Oat Hay	21.00@23.00
Wild Oat Hay	19.00@23.00
Barley Hay	19.00@23.00
Alfalfa, first cutting	16.00@20.00
Alfalfa, second cutting	22.00@24.00
Stock Hay	18.00@21.00
No. 1 Barley Straw, bale	50@80

GRAIN AND FEED STUFFS

Wheat—Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard white—	Per cental.
No. 1	3.66⅝
No. 2	3.61⅝
No. 3	3.55
Soft white—	
No. 1	3.63⅜
No. 2	3.58 1-3
No. 3	3.51 2-3
Club and Sonora—	
No. 1	3.60
No. 2	3.55
No. 3	3.48 1-3

For sacked grain add 9 cents per bushel of 60 pounds to above prices. Deduction of three-fourths of a pound is made for weight of standard grain bag. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to its merit.

Barley — No. 1 feed, 2.37½@2.45 per cental; milling, 2.55@2.60.

Oats — Red feed, 2.55@2.65 per cental for ordinary and 2.75@2.85 for choice; seed do, 2.90@3.10, with recleaned at 3.20 @3.40; black, 2.50@2.65 for feed and 3.00 @3.25 for seed; do. recleaned, 3.50@3.75.

SEEDS

Prices in round lots, lb.:

Millet, recleaned	5@5½
Flax	8@8½
Hemp	5½@6
Rape	2½@5

Food saving must go right on. We haven't yet made up the deficit of Europe or built up our own reserves —success lies in reserves.

BEEKEEPERS — WATCH FOR EUROPEAN FOULBROOD

European foulbrood, a disease of brood of bees which has caused great losses to American beekeepers is often confused with American foulbrood, though it is a distinct disease and requires different methods of treatment.

Symptoms of European foulbrood are variable, color being perhaps the most constant symptom. The earliest indications of the disease are a slight yellow or gray discoloration, and the uneasy movement of the larva in the cell. As the decay of the infected cells proceeds the color changes to a decided yellow or gray. A symptom of the greatest importance is the fact that the disease attacks drone and queen larvae nearly as quickly as those of the workers. The disease is very infectious at times, but it weakens rather than kills the colonies. If the colony is strong it can usually withstand an attack of European foulbrood, and will clean up the diseased cells. But where the disease is persistent, and the bees are not able to ward it off, the beekeeper should remove the queen and strengthen the colony by combining the bees from two hives, and after all trace of disease has disappeared give the colony a young vigorous Italian queen of resistent stock. A queen whose colony becomes badly infected is rarely of any value and should be killed.

WILLIE AND THE GOAT

"When the Germans reproach the Belgians," said Colonel House at a luncheon in New York, "when the Germans talk about guarantees against Belgian aggression, I am strongly reminded of little Willie.

"Little Willie ran howling with rage to his mamma.

"'That goat butted me!' he roared. 'The bad goat butted me in the stomach.'

"'Are you sure you weren't teasing it?' his mamma asked.

"'No, no,' wailed Willie. 'What would I tease it for? I was only just carvin' my name on its back with my new penknife.'"—Washington Star.

ANOTHER MOLLYCODDLE

"Do you play football?"

"N-no—that's too rough."

"Do you play baseball?"

"N-no—that's too exciting."

"Well, mebbe you tackle lawn tennis?"

"I have a weak heart."

"Rowing?"

"Too dangerous."

"Well, for the Lord's sake, as you never play, what do you do in the way of work?"

"I—I work in a powder factory."—Florida Times-Union.

HORSE TOO EXPENSIVE

Physical culture was the topic being talked in a Washington club when Senator J. Hamilton Lewis of Illinois said he was reminded of the view that was taken in that connection by a man named Jones.

One day Jones was complaining that he was not feeling as fit as usual, and a friend suggested that he go in for exercise.

"There's horseback riding, for instance," said the friend. "It is one of the best forms of exercise on earth."

"I know," was the doubtful rejoinder, "but I am afraid I couldn't afford it."

"Can't afford it!" wonderingly exclaimed the other. "You already have a horse, and just think of the appetite it will give you."

"Yes," responded Jones with a sigh, "and just think of the appetite it will give the horse."—Philadelphia Telegraph.

WHY, OH WHY!

The coal supply is getting shy,
And fierce will be the wintry clime.
Then, pretty, lady, why, oh, why,
Wear out your furs in summer time?

We are giving our work, our time and our money, but "They" are giving their lives.

WEATHER CONDITIONS

San Francisco, Cal., August 31, 1918.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	.01	.43	.21	70	48
Red Bluff	.00	.12	.02	110	68
Sacramento	.00	.00	.01	104	56
San Francisco	.00	.00	.01	84	53
San Jose	.00	.00	.04	96	54
Fresno	.00	.00	.00	106	68
San Luis Obispo	.00	.01	.05	92	56
Los Angeles	.00	.11	.00	90	64
San Diego	.01	.04	.00	78	66

Second Hand Building Material

80000 ft. Choice Gal. Corrugated Iron, good Straight Lengths

3,000,000 ft. Dry Dimension Lumber

New A grade guaranteed Plumbing, large purchases made prior to recent advances. Everything for the construction of a frame building. Get our money saving Estimates. Satisfaction Guaranteed.

Symon Bros. Wreckers

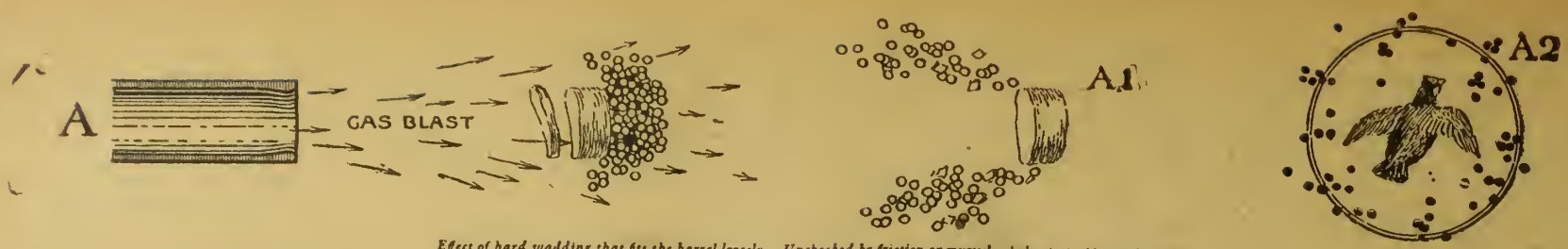
Block 11th & Market Sts., San Francisco

WORK A SINGLE DAY in one of these comfort-giving, convenient, economical suits and you will discard old-fashioned work clothing forever. **LEE UNION-ALLS** are fully constructed trousers—therefore it is not necessary to wear them over other trousers. **LEE-UNION-ALLS** are a fully constructed double pocket shirt—therefore it is not necessary to wear them over another shirt. **LEE UNION-ALLS** are a complete coat—therefore it is not necessary to wear an extra coat.

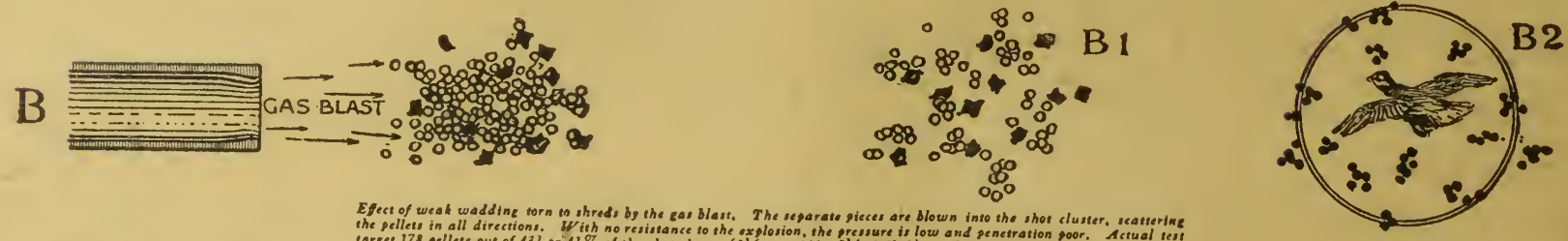
But don't be taken in by imitations, substitutes or "just as good." Insist on **LEE UNION-ALLS,** the garment that wears longest and fits best. Made of blue denim, khaki, Stifel stripe or Hickory stripe. If your dealer does not supply you, we will send your size direct. Write for descriptive booklet, telling us your chest measurement and material desired.

THE H. D. LEE MERCANTILE COMPANY

Kansas City, Mo. Kansas City, Kas. South Bend, Ind. Trenton, N. J.



Effect of hard wadding that fits the barrel loosely. Unchecked by friction or muzzle choke, it is blown through the shot cluster, scattering the shot charge. Actual test target, 221 pellets out of 431 or 51% of the shot charge (1¼ oz. of 7½ chilled) inside a 30-in. circle at 40 yds



Effect of weak wadding torn to shreds by the gas blast. The separate pieces are blown into the shot cluster, scattering the pellets in all directions. With no resistance to the explosion, the pressure is low and penetration poor. Actual test target 178 pellete out of 431 or 41% of the shot charge (1¼ oz. of No. 7½ chilled) inside a 30-in. circle at 40 yds

The Winchester system of wadding. The wadding expands evenly, sealing in the gas blast all the way to the muzzle, where it is checked by the "choke" or constriction. Shot cluster travels on ahead unbroken. Actual test target, 320 pellets out of 431, or 74% of the shot charge (1¼ oz. of 7½ chilled) inside a 30-in. circle at 40 yds

Effect of wadding construction on shot patterns

Poor wadding responsible for more faulty patterns and lost birds than all other gun and shell troubles combined

A strong uniform shot pattern depends upon how perfectly the *wadding* in your shells controls the five-ton gas blast behind it.

The wadding, like the piston head of a gas engine, must give the explosion something solid to work against so that the shot may be *pushed* out evenly.

It must expand and fill the tube of the barrel, completely sealing in the gas behind it. No gas must escape to scatter the shot.

It must offer just the right amount of resistance so as to develop uniform pressure and high velocity without danger of jamming the pellets out of shape at the "choke" or muzzle constriction.

The illustrations at the top of this page show actual test patterns, 50% to 70% faulty, the result of poor wadding.

The Winchester system

Winchester wadding is the result of repeated experiments to determine the most efficient control of the gas blast.

The special construction of the *Base Wad* gives what is known as *Progressive Combustion* to the powder charge.

Combustion spreads instantly through the powder charge. By the time the top grains of powder become ignited the *full* energy of the burning powder behind is at work. Though the explosion is almost instantaneous, it is none the less *Progressive,* the final energy and maximum *velocity* of the completely burned powder being developed at the *muzzle*, where it is most needed.

Meanwhile, under the heat of combustion, the tough, springy Winchester *Driving Wad* has expanded to fill the barrel snugly all around. No gas escapes. It is completely sealed in. The wadding *pushes* up the shot evenly.

At the muzzle the shot pellets slip out without jamming, while the wadding is checked for a brief interval by the constriction of the muzzle. *It follows some distance behind the shot pattern.*

The shot cluster travels on unbroken by gas blast or wadding and makes the hard hitting, uniform pattern for which Winchester shot shells are world famous.

Fish Tail Flash All Winchester smokeless shells are made with the new Winchester Primer—the quickest and most powerful shot shell primer made. Its broad *fish tail* flash gives even and thorough ignition. Every grain of powder is completely burned up before the shot charge leaves the muzzle.

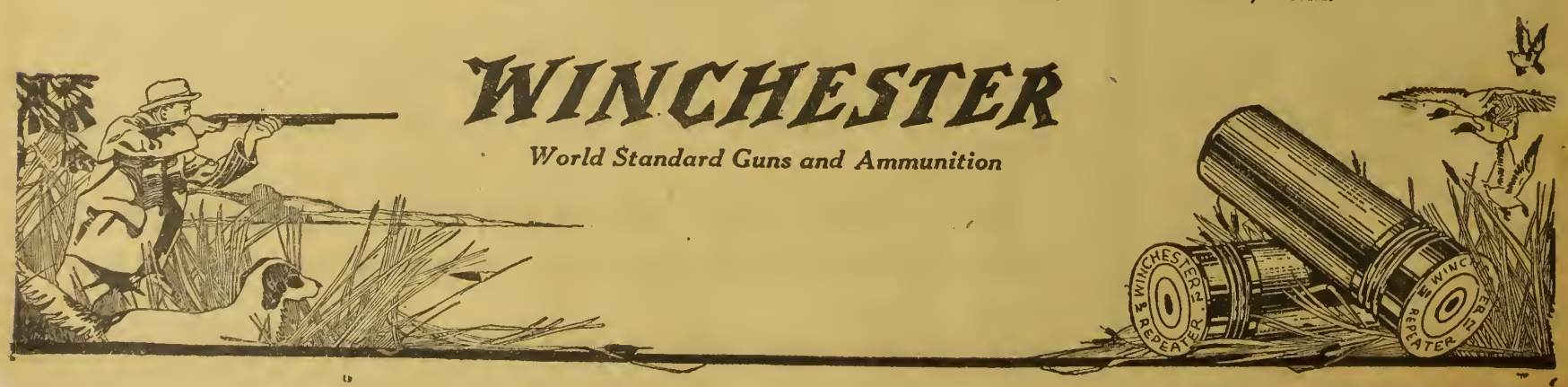
The Crimp The required degree of pressure necessary in seating the driving wads is worked out in combination with the *hardness* or the *softness* of the *crimping* required for any particular shell.

Water-proofing and Lubrication In the cold, damp air of the marshes, or under the blazing sun at the traps, Winchester shells will always play true. Winchester water-proofing process prevents them from swelling from dampness. Special lubrication of the paper fibres prevents brittleness and "splitting" in dry weather.

Uniform Shells From primer to crimp, Winchester shells are constructed to insure the maximum pattern possible from any load and under all conditions. $100,000 is spent annually in the inspection and testing of finished shot shells. 25,000,000 rounds of ammunition are fired every year in testing guns and ammunition.

Clean hits and more of them

To insure more hits and cleaner hits in the field or at the traps, be sure your shells are Winchester Leader and Repeater for Smokeless; Nublack and New Rival for Black Powder. Write for our Free Booklet on Shells. **Winchester Repeating Arms Co., Dept. XX-11 New Haven, Conn.**

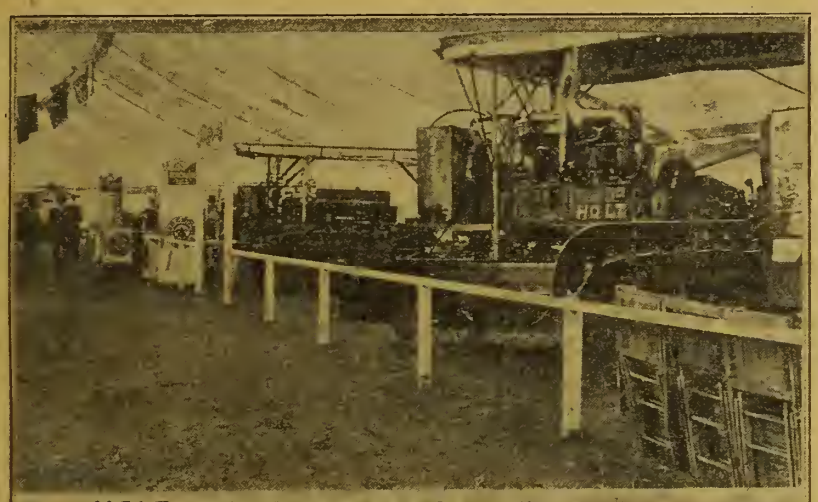


CALIFORNIA CULTIVATOR

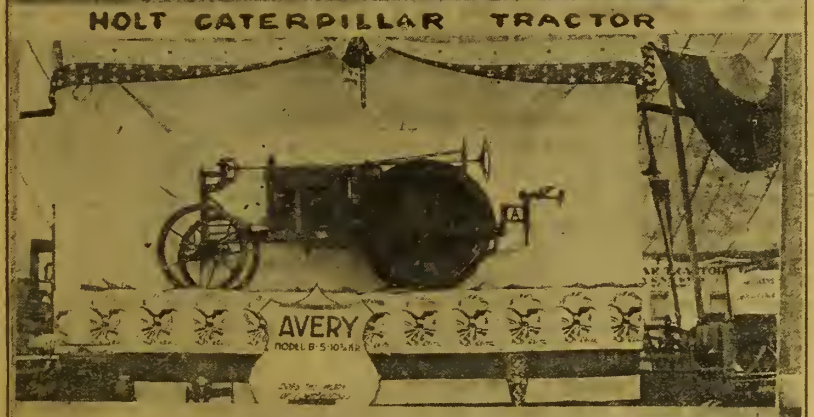
and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — September 14, 1918 — No. 11

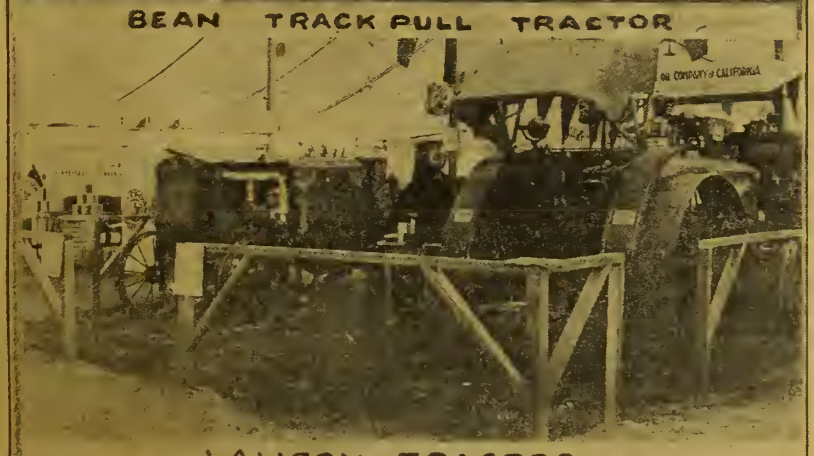


HOLT CATERPILLAR TRACTOR

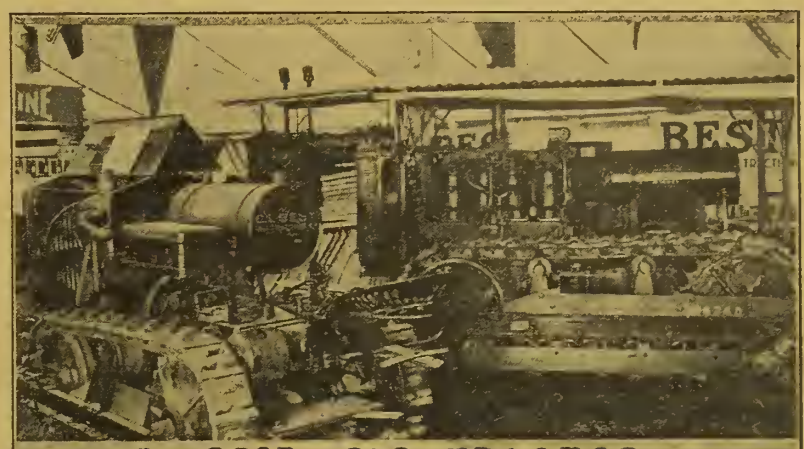


AVERY TRACTOR

BEAN TRACK PULL TRACTOR



LALISON TRACTOR



C.L. BEST GAS TRACTOR

SAMSON SIEVE GRIP TRACTOR

CLEVELAND TRACTOR

YUBA BALL TREAD TRACTOR

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914.
Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916.

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Saturday, Sept. 14, 1918

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

This is tractor week. In fact, the Cultivator is acting as the meat in the sandwich this week. Last week was state fair week, and the greatest feature at the fair was the display of tractors and farm implements. A taste of that exhibit is given on our cover and further described on Page 5. The event next week is the demonstration. The Cultivator's camera will also be there and, so far as the dust will permit, will make graphic report for our readers.

THE GREAT SUMMONS

Thursday of this week will prove one of the great days of history. It is expected that final tabulation will show approximately thirteen million of American men have responded to the summons to register for service to answer the German challenge, might makes right.

America was desperately slow in entering the war but once in she is coming with overwhelming power.

Perhaps, Kaiser Bill, her might may right, so far as possible, some of your awful wrongs.

NOT ALL BEER AND SKITTLES

The hop growers of the northern Sacramento Valley are up in arms because the tobacco industry seems to be working the present war condition for an enormous amount of free advertising and greatly increased consumption, while hops are taboo. A northern paper reports:

"The hop growers will declare that the lands now used in growing tobacco should be devoted to growing wheat. In this way it is expected to force the tobacco growers to make common cause with the brewing advocates."

The hop men hope to be joined by the barley growers as well. The fight is to be carried to Washington.

FILE COMPLAINTS

George C. Roeding, president of the state board of agriculture, and hence at the head of the board of directors of the state fair, has closed his first year in office. President Roeding is not one of the thin-skinned variety that wants to be fed on sugar-coated morsels, but goes out and frankly asks, "What are our faults?" The exhibitors at the recent state fair were somewhat surprised when President Roeding appeared with stenographer at his elbow and remarked: "Boys, the fair is nearly over. Naturally you have some kicks coming. What are they?" The president promised nothing for the board of directors, other than that every complaint would be properly filed and where possible requests for changes in details of future fair management would be granted.

We have attended the fair for many years and do not think we have ever heard so little complaint as this year. Of course, much of this improvement comes from the lessons of each of the former years, but the attitude of the board in seeking further for improvements is to be commended. There are some features, for instance, the separating of the dairy classes, some being at one end of the ground and others more than a half a mile away, which have caused serious complaint for years. We know that change of this particular feature is under advisement.

Generally, there was less of the spectacular this year and more attention given to such features as make for a great agricultural fair.

STANDARDIZE

Unfortunately a vast number of exhibits at the agricultural fair receive only a passing glance. These are often worth at least a moment's—or an hour's—study, if one would go home from the fair with fullest information. One such was in the exhibit of the state horticultural commission in the new horticultural building at the state fair.

The first glance at this exhibit gave a distinct shock. This building was filled with peaches that were peaches and nuts, perfect in appearance, uniform in size, pears, and in fact, all other kinds of fruits, displayed in perfect commercial pack and on single plates. But the exhibit to which we have referred in the standardization booth of the state horticultural commission was of gnarled, scabby, wormy, under and over sized apples and other fruits. Why this exhibit of these fruits, with perfection on all sides? The attendants explained: "These fruits and many others in this booth are exactly as some shippers have packed them for shipment to Eastern customers. They have been caught by our inspectors before loading, condemned, and are here exhibited as an awful example."

Many a Californian who takes pride in the products and in the good name of the state were most indignant at the sight presented in this booth. The exhibit made will strengthen the hands of the inspectors who have the responsibility of enforcing our state fruit standardization law.

FISH PRICES

With the ocean full of healthful foods for the human race there is no reason, not even an excuse, for fresh fish prices which are maintained on the Pacific Coast. Perhaps the suggestion has no value, but it might be well for each of us to take our hook and line and replenish our own larder. This reminds us that here is an opportunity for the state fish and game commission which has been accused of being about the most expensive and useless of the commissions in the state. It might well at such a time as this abolish hunter's and fisher's licenses.

GO TO COLLEGE

The war department has started a new drive. It is termed the "Go to College Drive." The people of the United States should recognize that the maintenance of the war strength of the nation in its full power demands the utmost efforts of all existing well organized and adequately equipped colleges, universities, and technical schools. This means ever increasing and more devoted bodies of students as well as faculties.

Young people having the requisite qualifications should heed this urgent call of their country and apply themselves diligently, enthusiastically, and in increasing numbers to the task of preparing for the highest service of which they are capable. Wherever practicable young men should at the same time join the students' enlisted reserve and prepare for military service in order to be ready for that call also when it comes.

America has astonished the world in its raising and equipping of a great army. We all felt at first that the "haste" we were making was desperately slow, but owing to the quality of the timber the war department could command in the making of this army the little over a year of time has placed a better equipped army in the field than 40 years of training and preparation with lower quality of material would have made possible. This truth is so fully realized that the department of war is wise in encouraging the best of education for the young men at home. When peace comes and remains we will be all the better fitted for its problems.

USE EFFICIENT MACHINERY

Farm implements should be as large as the farm and conditions will allow. Why should a strong man operate a two-horse team and one plow bottom, when he might as well drive a tractor or four or six horses on a gang plow and accomplish twice or three times as much labor? With the present high price of labor and feed and the relatively low price of good machinery and the excellent prospect for high prices of farm products, there is no excuse for the one-horse, low gear farming characteristic of some farms and localities.

This Week's War Notes

An I. W. W. bomb explosion in Chicago killed three.

Pershing's casualty list is increasing almost daily, some days now reaching close up to 1,000.

The ninth German loan is announced for September 23. The bonds will bear five per cent and are issued at 98.

Secretary of War Baker and John D. Ryan director of air service, are in France investigating as to the American airplane situation.

A treaty of alliance has been concluded between Germany and Finland, under which the entire man-power of Finland is put at Germany's disposal.

The American Trans-Atlantic Company has had all of its ships and property commandeered by the shipping board on the ground that it was owned by Germans.

American shipyards turned out 66 vessels during the month of August. Forty-four of these were of steel; others of wood. It is thought the year's production will exceed 2,000,000 tons.

The war time prohibition bill is nearing passage, and it is expected it will make prohibition effective July 1, 1919. The administration has ruled that no more beer shall be manufactured after December 1.

Geneva reports that German Great General Headquarters has been moved out of Belgium, two special trains being required to carry away the documents. It is thought the new headquarters will be at Bonn, Germany.

Accurate information regarding German losses since March 21 indicates that killed, wounded and prisoners total at least 1,100,000. It is estimated that practically half of this number were killed, permanently disabled or taken prisoner.

The Turks are becoming restive, and it is rumored a large force has been sent to the Bulgarian border, and it is possible the armies of the Central Powers may yet be fighting each other. The Turks claim the Bulgarians have been seizing Turkish territory.

Thursday of this week was registration day. It was made a legal holiday and there were approximately 13,000,000 registrations. Gen Crowder announces that the first call will include men of 19 and 20 years and 31 to 36 years, inclusive. When the men of those ages have been called, then the boys of 18 and men of 37 to 45 will be called, it is expected, early in 1919.

Field Marshal Haig has issued a statement to his armies, commending them for glorious accomplishment at the critical moment when the English armies were almost broken by the enemy's assault, for the fact that they are everywhere today advancing victoriously, for the capture of 75,000 troops and 750 large guns, and assuring them that the war's crucial period is now ended for the Allies.

How many American troops have been landed at Archangel is not announced but it is known that the number is considerable and that the Allied troops are gradually marching southward. Little information can be had as to the situation in Siberia, as utter chaos prevails, though information secured from Tokio indicates demoralization of the Bolshevik troops. Lenine was shot by a loyalist but is still alive.

Reports from Berne, Switzerland, indicate serious riots in Vienna as Austrian troops were entrained for the west front to help the Germans in repelling the Allied offensive. Thousands of angry women mobbed the railway stations, shouting "Down with Germany!" and protesting against the taking of Austrian soldiers to protect Berlin. Mutinies amongst the Austrian troops of other sections have been general.

The Belgian army has finally been given permission to take its turn at the hated Hun, and on Belgian soil began a surprise smash on Tuesday forenoon that tore through the Hun trenches for a depth of more than a mile on a three mile front, taking three villages. The Belgians were rewarded by the capture of a large number of prisoners, also of machine guns and large guns. This was all north of Ypres. South of Ypres the British, the French and the Americans, in some sections fighting together and in others as individual armies, are pressing back the Germans and Austrians at every point. Gen. Foch apparently proposes to make his pressure continuous and "fight it out on this line" if it takes several summers. In fact, it is definitely announced that the Allies propose to continue with the pressure the winter through. The Germans have been forced back to the Hindenburg line at many points and possibly before these words are read may be still nearer the Rhine. The Germans are burning and destroying everything as they retire.

Artillery of Agriculture

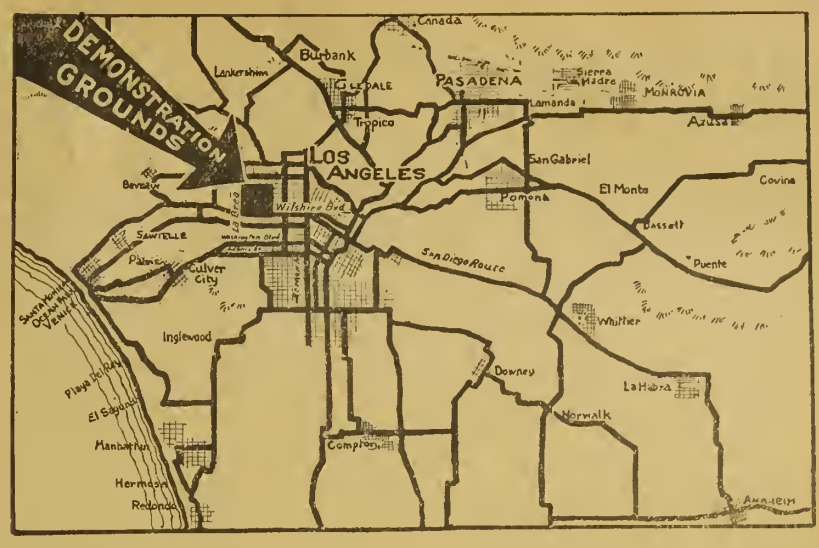
SECRETARY HOUSTON of the United States department of agriculture terms farm machinery, farm power, and especially tractors, the "Artillery of Agriculture." Artillery of war requires large outlay of cash but conserves the lives of soldiers. The artillery of agriculture is expensive to install but conserves labor and makes possible production demanded when the nation's men are required in overseas service.

Besides the economy item, from the farmer's standpoint there is another consideration which affects us nationally. For weeks there have been shipments of mules from American ports at the rate of 5000 animals daily. With the burden of feeding the world increasing day by day, this shipment of farm power would cause consternation were it not for the farm tractor, the farm truck, the trailer and improved power implements. Fortunately the farmer has opened his eyes and sees the necessity for using this new farm power. He is aided in getting the information required by exhibits at fairs and demonstrations in the open field.

California has just closed her most successful fair from the standpoint of tractors and implements. She is just ready to open to the inquirer her greatest demonstration.

This demonstration has been announced several times in the columns of the Cultivator to take place on the Whittier Boulevard east of Los Angeles. But a change of location has been made, and the demonstration will now be held on a much larger tract between Los Angeles and Santa Monica. In fact, the tract is 500 acres, and at this moment huge tents are being erected, with smaller temporary buildings containing rest rooms, telephone booths, restaurants, refreshment rooms and other accommodations. Parties going to the demonstration by auto, follow out Wilshire Boulevard. Free parking space is provided. Auto bus will meet the Sherman or Colegrove Santa Monica car at Brea Station.

Private demonstrations and exhibits will open at 8 o'clock every morning from Tuesday, September 17, to Saturday the 21st. The private demonstration feature will fill the forenoons, while the general public demonstration will occupy most of the time in the afternoon.



WHAT THE EXHIBITORS WILL DISPLAY

Over 100 tractor, farm implement and ranch accessory exhibitors have taken large space at the tractor demonstration and the displays this year will reveal many interesting features.

Arnott & Co., in tent 80 by 100, grain drills, bean drills, Buckeye, cultivators, plows, threshing machines, beet pullers, hay presses, Dreadnaught tires.

A. B. C. Oil Co., complete line of oil, special grades for tractors.

A. H. Averill Manufacturing Co., the Russell tractor.

American Engine and Aeroplane Co., samples of piston work, cylinder grinding, etc.

F. T. Briles, Cleveland tractors, all 12-20's; five sizes of Schmeiser land levelers, model D. Bates Steel Mules, Brennis cultivators and sub-soilers.

C. L. Best Gas Traction Co., three sizes of the Best tractor.

Barney Oldfield Tire Co., various methods of tire repairing, etc.

Belt Rail Tractor Co., the Belt Rail tractor, disc harrows, goose neck cultivator, P. & O. and Oliver plows.

Bean Spray Pump Co., Bean Track Pull tractor, spray pumps and outfits, and irrigating pumps.

E. P. Bosbyshell Co., farm implements, Rock Island tractor tools and Heider tractors.

W. J. Burt Motor Car Co., Bear Cat tractors and Auburn automobiles.

Clark & Wells, cylinder grinding.

J. I. Case Threshing Machine Co., Case 9-18 and 10-20 tractor; threshing machines and road graders.

California Moline Plow Co., immense plows, harrows, grain drillers, grain binders, mowing machines and disc harrows.

Chevrolet Motor Co., one ton truck and several small commercial cars.

Sam C. Carter, Lauson tractors.

W. L. Cleveland Co., Monarch tractors, Waterloo Boy Model N, plows, discs, harrows, Cleveland special cotton and corn cultivators, cut down cylinders and motors.

Dauch Manufacturing Co., Sandusky tractors.

Delco Ignition and Lighting Co., exhibit embodying many electrical appliances and devices, including complete lighting and generating plants, electric washing machines.

Dixon & Griswold, P. & O. plows of all sizes, cultivators, discs.

Denby trucks exhibited by H. G. Pendell.

Ensign Carburetor Co., carburetors.

Fairbanks Morse Co., irrigation machinery, silo cutters, feed mills, electric motors, scales and gas engines.

Fageol Truck and Tractor Co., Fageol 9-18 Walking tractor.

Garford Truck Co., trucks of various capacities.

A. F. George, John Deere Plow Company's line and Yuba tractors, mould board, disc plows and Hardie sprayers.

Hauser Packing Co., fertilizers, etc.

Homer-Laughlin Co., transplanter and Little Husky tractor.

Harron, Rickard & McCone, Wade Drag Saw, operated by power and farm hardware.

H. Hayman & Co., International Harvesters, Oliver plows, Planet Jrs., International Titan tractors, tillage tools, Roderick Lean disc harrows, and McCormick tools.

Holt Manufacturing Co., two 75 and two 45 caterpillar tractors, caterpillar land levelers, discs and plows.

Killefer Manufacturing Co., 32 tractor implements, automatic lift subsoilers, gang plows, and double disc harrows.

Klieber Motor Truck Co., two and three and one-half ton trucks.

Keaton Tire Co., tires and tire accessories.

F. E. and W. F. Keyes, oil burners.

L. A. Auto Tractor Co., Little Bear tractors and Best tractor.

Moreland Truck Co., distillate burning truck chassis, and four ton truck.

Motors Equipment and Tractor Co., Beeman Garden tractor.

McFie Supply Company, blacksmith equipment for repairing of tractor tools.

J. A. Masterson & Co., ball bearings.

Monomobile Oil Co., oils.

National Automotive School, display of demonstration equipment used in its school and head instructors will give free lectures daily during the show.

Norwalk Tire Co., and Lichtenberger-Ferguson Co., Norwalk tires and tubes.

Nelson & Price, tires.

Puente Oil Co., tractor and automobile oils.

F. H. Poss Co., Avery tractors.

Panama Lubricants Co., Pennzoil line of lubricants.

Republic Tractor and Truck Co., tractor.

Miss Marie L. Rimpan, ditcher.

Splitdorf Electrical Co., magnetos, spark plugs.

Samson Sales Co., G. M. C. tractors.

Standard Oil Co., oils.

Strong & Turner, oil burners.

Service Truck Co., trucks.

Smale & Waterbury, Nilson Senior and Nilson Junior tractors.

L. Sonneborn Sons, Amalie lubricants.

Smith-Booth-Usher Co., irrigation appliances.

U. S. Spring Co., springs.

Union Oil Co., oils, greases and engine fuels.

William L. Hughson, Fordson tractor.

Woodward Truck Co., Ford truck attachments.

William Gregory, Trundaar and Lambert tractors.

Continued on Page 258

Exhibits of Tractors and Farm Appliances at State Fair, Sacramento

At the left: One of the newer ones, the Nilson; this exhibit made attractive by partial dismantling to show ease of reaching all parts. The center picture shows the ease with which the farm buildings may be lighted by use of the Lalley Light. The Bear Cat, "strong as a bear and quick as a cat".

The California State Fair Brought Together a Most Complete Exhibition of Farm Implements and Farm Power

Only about half of the J. I. Case string of tractors in the big fair tent is shown in the above illustration. Center view is from an entirely different section of the grounds and is an exhibit of the Calf-Way Milker. At the right are the Titan and other tractors of the International Harvester exhibit.

Agricultural News Notes of the Pacific Coast

Northern California

Grass Valley is now sending out heavy shipments of Bartlett pears.

Bean growers of the Sutter Basin have united in a grasshopper fight.

The Soda Canyon farm center has decided to exhibit at the Napa County fair.

An olive grower at Woodland reports sale of his crop at 17½ cents a pound.

Sutter County's grape harvest has begun. Thirty dollars per ton is the usual price.

Northern California's orange crop is not expected to be any heavier than last season.

Meridian and Live Oak districts of Sutter County report big yields of all crops this year.

The Humboldt County farm bureau will hold its annual meeting at Fortuna late this month.

The government has ruled that all boxes used for raisin shipments must be bound with strap iron.

All the grain on the great 20,000 acre ranch of Moreing Brothers in the Natomas district is being handled in bulk.

Rice growers are endeavoring to secure early maturing varieties, and for this purpose are investigating in the Philippines.

Humboldt County's 23rd annual exposition was held at Ferndale August 21-24. There was an especially heavy exhibit of live stock.

H. E. Wahlberg who has been acting horticultural commissioner of Glenn County has been named farm adviser of Orange County.

The county farm adviser of Napa County announces that he has more help registered for prune picking than he is able to find positions for.

The warehouse of the Sutter County Almond Growers' Association at Yuba City is now open for receipt of almonds. The crop is light this year.

Placer County farm center meetings will be held at Bowman, September 8; Long Valley, 21; Roseville, 23; Colfax, 25; Mt. Vernon, 28. These are all night meetings, beginning at 8 o'clock.

Local farm center meetings will be held in Glenn County during September; Bayliss, 6; Codora, 9; Orland, 11; Jacinto, 13; Willows, 16; Millsap-Millville, 18; Plaza, 20; Grapevine, 25; Elk Creek, 25; 2:00 p. m.; Larkin, 27.

Farmers of Ord, Glenn County, have completed plans for building an elevator of 15,000 sack capacity. The grain belonging to farmers erecting the elevator will be handled in bulk through the elevator this season although it will not be completed.

Great preparations are being made for the Pacific Coast Land and Industrial Exposition at San Francisco from September 9 to October 6. The state university will have a large exhibit showing the work it is doing in drilling young men for technical service in the army.

The state is making arrangements for a rolling tractor school which is expected to be in operation early in December. It is expected to have four of five units for the state. The course of instruction will occupy 24 days. Half of the expense will be borne by the state emergency fund and half by schools in the locality where instruction is given.

Central California

Malagas are bringing good prices in Eastern markets.

Kern County's rice fields are said to be in excellent condition.

San Joaquin Valley expects to have a $20,000,000 crop of raisins.

Turlock makes its heaviest shipment of melons to Chicago.

Porterville reports little need for fumigation work in its groves this year.

Almond shells are being shipped to New York for use in making gas masks.

Cool weather in the San Joaquin Valley is holding back the maturing of Malagas.

The Visalia high school has arranged to give a course in tractor management this fall.

Several mountain fires have been reported, circumstances pointing to incendiary origin.

A ruling has been made that irrigation taxes may be exempted from federal income tax.

The Kearny Farm of the state university near Fresno expects to have 1000 tons of raisin grapes.

The Visalia high school will offer a tractor course September 23 to 28. Nine or ten tractors will be on the grounds.

Kern County pear orchards show fruit ripening very rapidly. Two carloads a day are being sent from Tehachapi.

The British government has purchased over a half million dollars worth of raisins from the Associated Raisin Company.

Fires which destroyed canning and dried fruit plants at Hanford and other fires at Fresno are being openly charged to I. W. W.'s.

Reclamation work has been started on district number 1064 east of Patterson, Stanislaus County. Some 5000 acres will be reclaimed.

State Superintendent of Weights and Measures Johnson says that dirt must be kept out of the baled hay; if not arrests will follow.

An expert of the United States bureau of entomology has been sent to Dinuba to devise some measure of control of the mealy bug pest which has become serious.

The California Peach Growers on one day last week shipped eight carloads of peach pits to army gas mask factories in San Francisco. The government pays growers $7.00 per ton and accepts delivery in boxes or containers of any kind.

The farm bureaus of Fresno, Tulare, Kings, and Kern Counties are considering plans for cooperative marketing of their livestock. A committee appointed to investigate ways and means will report to a joint meeting of the bureau today.

A branch of the federal bereau of markets has been established in Fresno. E. W. Stillwell will be in charge. Market quotations on San Joaquin Valley products will be received and dispatched to all who are interested in the service each day.

The Southern California Edison Company has petitioned the state water commission for permission to divert 120 cubic feet per second of waters of Pitman Creek for storage in Huntington Lake and 3781 acre-feet per annum for storage in Pitman Creek reservoir.

Southern California

Brawley reports the opening of a new cotton gin.

Simi, Ventura County, is threshing a big bean crop.

Elsinore canneries expect to begin soon on tomatoes.

The Oxnard Citrus Association has formally incorporated.

The Santa Maria Valley bean warehouse has been completed.

Walnuts in the Lankershim district show no damage from sunburn.

The Oxnard sugar factory has put in some women weighmasters.

Valencias are still bringing big prices in the Eastern markets.

Ventura County has 90,000 acres in beans valued at over $12,000,000.

Wine grape growers of San Bernardino County are getting $30 a ton.

Walnuts are ready for harvest in the Tustin district of Orange County.

One hundred and twenty acres are being planted to broom corn in Victor Valley.

The new packing house of the Irvine Walnut Association is ready for business.

There will be a monster tractor demonstration at Los Angeles, September 17-21.

Riverside County is planning to exhibit at the Liberty Fair to be held in Los Angeles in October.

The Oxnard sugar factory is slicing beets from the Chino, San Fernando, and Ventura districts.

Southern San Diego County had a rainstorm last week. Lakeside reports a fall of 1.4 inches.

Santa Ana walnut growers have found plenty of help available without calling on the Women's Land Army.

At the last meeting of the El Cajon farm bureau center topics of discussion were handling of winter vegetable crops.

Many Imperial Valley stock breeders are planning exhibits at the Liberty Fair to be held in Los Angeles, October 12-26.

Bean growers of Riverside County met at Riverside last Monday to hear Manager Churchill discuss the marketing situation.

Experts from the citrus experiment station have been giving demonstrations in scaly bark control in various orchard districts.

Orange County walnut growers are paying $1.25 per hundred for shaking and picking. This is equavilent to 75 cents per sewed barley sack.

A price of $22 to $25 a ton for polling and picking walnuts has been fixed by the wage committee of the Ventura County farm bureau.

Many Ventura County fruit ranchers are said to be breaking over the wage scale adopted by the farm bureau, paying more for extra help for short time work.

The California Lima Bean Growers' Association urges all its members to have their fields gleaned this year on a per day or a per pound basis instead of on shares.

The new cannery at El Cajon, San Diego County, has been unable to operate continuously because of scarcity of help. The grape men are paying 50 cents an hour for pickers and the cannery men cannot meet that price.

The Coast and General

Oregon holds her state fair at Salem, September 23-28.

The Oregon Interstate fair will be held October 1-5 at Prineville.

The Rogue River Valley of Oregon has shipped out most of its pear crop.

The campaign for the Fourth Liberty Loan begins September 8 and closes October 19.

Bounties amounting to $1077 were recently paid to a Clatsop County man for 359 sealion scalps.

Sugar beet farmers of Ontario, Canada, have secured Mexican labor and have found it very satisfactory.

Arizona cotton growers have found a poison for boll weevil which it is hoped will control the pest next year.

Washington's 1918 wheat crop will total 30,000,000 bushels. This is an increase of 3,000,000 bushels over last year's yield.

Manager McCullagh of the Hood River Apple Growers' Association estimates the pear crop in that section at 75 carloads.

A short course in the handling of farm tractors will be held by the University of Idaho for two weeks next January.

All wheatless days and meals for America are abolished, but bread will be made from "Victory flour" containing 80 per cent wheat.

Idaho's farm market director urges dairymen to buy what hay they will need for the winter immediately, before prices soar any higher.

Stock men of the Inland Empire have formed an association with headquarters at Spokane. E. E. Flood has been elected secretary-treasurer.

As olive oil is considered a necessity in Portugal, and the coming crop is not adequate for local needs, the government has prohibited its export.

The war industries board announces agreement with manufacturers of passenger autos whereby their output for the last half of 1918 will be cut to one-fourth that of 1917.

Seattle's shipyards were suffering from shortage of unskilled labor but the need has been met by the volunteering of citizens of all walks of life from the mayor down. Business men are contracting to work for from 30 to 60 days.

The entire output of all factories making soluble coffee in the United States has been bought up by the government for the use of our soldiers in front line trenches. When hot water is not available the boys can make coffee by mixing with cold water.

An automobile trailer, fully equipped with chemical tanks and other firefighting apparatus, is being maintained by the Pullman, Washington, chamber of commerce during the harvest season for fighting grain and farm fires in that vicinity. A volunteer firefighting force of 15 men has been organized.

A second shipment of foxglove, 850 pounds—enough for nearly 510,000,000 doses of tincture of digitalis—dried and shipped by citizens of Oregon at the request of the United States government, has been sent to the federal laboratory at the University of Minnesota, where it will be made into tincture of digitalis for the army and navy.

Tractors and Implements at the State Fair

Written for California Cultivator by M. C. Holman
Photos by the Author

HARDLY anything could have been more pleasant to an earnest agriculturist than to see the very complete tractor exhibit at the state fair. It was splendidly housed in two mammoth tents and was so agreeably arranged that the prospective buyer could view the machines from every angle.

Great crowds thronged the broad aisles, flags of all allied nations were unfurled, music by the Holt, Samson and Best bands was rendered daily and the entire exhibit took on the nature of a successful product successfully handled.

If tractors could speak, those at the state fair would have told a wonderful tale. Their existence is the crowning achievement of agricultural implement construction. We speak of tractors as inanimate objects, but to one who knows and loves them they are rather the very essence of life and activity.

At the state fair we heard a wonderful harmony of tractor voices. We heard the little fellow, hardly yet out of his swaddling clothes and we heard the giant of them all. It was a great family circle, each with his part to do. There is harmony in that circle, partly because tractor sales are good and no one needs to say aught against his fellow. And there was harmony because each tractor travels its own course, doing the things that others are not fit to do and leaving to others the things it should avoid.

Who could fail to stop and wonder, as he entered the tents in the tractor section? There, before one's eyes were the steel giants, motionless, it is true, but with a force that was at once capable of turning the soil, planting the seed and reaping the harvest of the lands for miles around. All they needed was a little of the encouraging fluid and a chance to show themselves.

If one will observe he will find that it is easy to distinguish three classes of agriculturists, in so far as tractors are concerned. In the first class we would place the man who already owns a tractor, and he attends the show to note the improvements that have been made in his tractor and to get some pointers upon the management or care of his machine. In the second class we find the man who has made his selection of the tractor that he feels sure will meet all of his requirements, and he comes to the fair to confirm his judgment after having studied the various catalogues for which he has sent. And there is the third class. He is the man who has made up his mind that he must have a tractor, but has not yet settled upon the one that seems to meet his every requirement. We might also define a fourth class. He is the man who still thinks that his four horses are good enough for him and that too much mechanical farming is not the way nature intended he should raise his crops. The horse has his many uses on the farm, but he may sometimes be an expensive luxury. United States statistics show that the average farm horse works but three and one-half hours a day. He consumes ten pounds of food for every hour of work, or 12,000 pounds a year, which is the product of five acres under cultivation. The horseshoes that are annually hammered on by the American blacksmiths take enough iron to make several thousand tractors.

Let us take a glance at some of the tractors, and see what we can discover in them that would particularly meet individual requirements. For a long time the farmer of California has been looking for a small tractor that would be suitable for farms of fifty acres or less. There are hundreds of such small places in the state and to get a tractor that would do the work and at the same time come within the means of the purchaser was the real puzzler. But these obstacles have been overcome in the new tractor that has recently come to the Coast from the Avery factory and is being offered through F. H. Poss of San Francisco.

This little tractor is of the 5-10 horse power size with Hyatt roller bearings throughout and three speeds. It is capable of using two plows and will work at the rate of two and a half miles per hour. The engine is enclosed, giving freedom from dirt and minimizing the labor of its care. At the price at which it is sold this tractor bids fair to completely meet a very big demand.

Another of the smaller type of tractor is that made by the Bean Spray Pump Company of San Jose. This tractor is peculiar to itself in that it has but one tractor tread of the tracklayer type. It has a six horse power rating with ten horse power at the belt. Its speed, when plowing, is two and one-half miles per hour. It is equipped with Hyatt roller and New Departure ball bearings and has a total absence of plain bearings. The links of the traction chain are identical and interchangeable, and are made of the finest carbon steel. It carries the famous Le Roi motor of four cylinders. The Bean tractor is particularly serviceable in orchard work as it can make short turns and is quickly controlled by the hand lever.

Quite a satisfactory tractor in every way is the Cleveland. It is a tractor from start to finish and the entire mechanism is encompassed in the space on which the treads rest. This tractor was designed by Rollin H. White, the famous motor truck engineer and has been improved upon from year to year, until it seems to embody everything that could be desired in a general all-around tractor. In considering this tractor we advance around in the scale of sizes, for it is of the 12-20 horse power type, being suitable for any size place from 50 acres up. There are 24 bearings in this machine and they are all of the famous Hyatt make, with dust proof casings. The motor is their own manufacture and is especially designed to carry the weight of this machine. The traction surface is 600 square inches and the turning radius is 12 feet.

In these times of great ship building it is a pleasure to see a tractor that is "built like a battleship." Such a one is the Samson Sieve Grip tractor, and it is sturdy, powerful and reliable. One cannot escape admiring the husky bulldog courage of this tractor, and it seems ever on the watch for something to do.

When one realizes that the Samson will replace ten horses its immense value to the farmer becomes very apparent, but it is also adapted to countless uses for which horses are not available. The strength of its working parts and its dust proof motor give assurance of long life, steady work and low up-keep cost. It is simply, but powerfully constructed, the work of years of development and no skilled mechanic is required for its operation. The simplified steering device makes its guiding an easy matter for the operator. The Model S-25 is a full 25 horse power machine with over-size bearings, steel construction and dust proof bearings, with thorough lubrication. The peculiar construction of the wheels gives a tremendous gripping force with corresponding traction power.

That women are becoming expert in the work of driving tractors was shown at the recent demonstration at Davis, when the Yuba tractor was driven by a comely young lady in the regulation overalls. And others have followed the lead until it is now quite common to see women guiding the big steel horses. And the women enjoy their work immensely. It is fascinating, invigorating and health giving. It takes upon itself the nature of war work and every woman is striving to do her bit to help restore Europe to civilization.

As the Yuba tractor is similar to an automobile in its steering mechanism it is at once suitable to feminine guidance. And there are sure to be more women drivers each year for it is to become popular work on the farm. In working with the Yuba the driver has at ready command the power that displaces 12 horses and several men. The model 12-20 is 25 horse power with a high power four cylinder engine to furnish the motive pow-

In the Tractor Tent at the State Fair
At the left: Waterloo Boy, a standard, medium-powered tractor; middle, Sandusky, Model J. 10-20; at the right, Russell, one of the newer large wheeled types.

Exhibits in Tractor and Implement Tent not Exclusively Tractors
California Corrugated Culvert Company of West Berkeley made attractive exhibit, a partial view of which is shown at left. In the center is a section of the Standard Oil Company's exhibit which was one of great attractiveness. Some of Schmeiser Manufacturing Company's land levelers, big enough to command full energies of largest tractors, were exhibited. A portion of their display is shown at right.

er. The Yuba is a thoroughly well constructed tractor and is a strictly California product, being built at the immense shops located at Marysville and Benicia.

And now, let us approach the big fellows—those that go regardless of what is behind them. Whether it is plows, harrows or scrapers, or field artillery, or whether they are working as tanks on the western front, they go, and everything goes along with them. They are the giants of power, the great forces that bring in the harvesters on the big ranches of California and on the plains of Kansas and Nebraska. They are supreme in their tractor field and on the battle fields of Europe they are aiding the doughboys to keep the Huns on the run.

The big Holt and the big Best are of the type enormous. They appeal to men who have big things to do. These immense tractors have a rating of 75 horse power and weigh about 12 tons. Their very bulk, the power they represent and the work they can do are things to conjure with.

There were, of course, dozens of other tractors, all worthy of purchase, but too numerous to mention.

We would be pleased to furnish specifications of each tractor, but it would require volumes. Instead of that we are showing you a complete view of the tractors as they stood on exhibition. The particulars as to mechanism, power, uses, construction, etc. are discussed and fully illustrated in the catalogues issued by the manufacturers.

In all, the exhibit numbered more than 60 machines of various types and sizes. Some were of the caterpillar type and others were of the big wheel model. One could look and admire to one's heart's content and in that great array it is not difficult to select the one that will best suit ones needs.

The modern tractor is a most complete and perfect piece of mechanism, and with proper care it should last for many years and give undiminished service. One of the most important elements in the care of a tractor is lubrication, and fully realizing the importance of this branch of the care of tractors the Standard Oil Company placed a complete line of its tractor oils on exhibition and also sent its expert to deliver lectures on the essentials of lubrication.

And intermingled with the tractors were the plows of various sizes, harrows, scrapers and all kinds of tools that properly accompany the tractor.

This tractor display was under the auspices of the California Tractor and Implement Association and it covered an area of more than 44,000 square feet. While it was what is termed a still exhibit, there was plenty of opportunity to make a close examination of the various parts of the machines and that kind of an exhibit has its many advantages, not the least of which is the avoidance of having to tramp over furrowed and dusty ground.

A complete demonstration was held every night in front of the grand stand. It consisted of moving pictures of tractors at work under various conditions from side hill work to pulling the deep sub-soiler. The demonstration was the first attempt to combine the two kinds of exhibits and that it was successful and much appreciated was attested by the crowds of from 1000 to 4000 nightly.

But if one must see the tractors in operation the opportunity will be afforded next week near Los Angeles, where the tractors can be seen tearing up the ground, making turns, going up hill and down and pulling more than they are rated to pull. But suffice it to say at this time that a visit to the state fair was wonderfully profitable, if only to become better acquainted with tractors. The two large tents in which the display was housed were thronged during the entire week. Descriptive matter of all kinds was to be had and the educational features of the exhibit were such as to make men know that to use a tractor is making the step in advance which every progressive farmer wants to make. We predict that many more tractors will be seen on California farms because of the exhibit at the war-time state fair.

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Any way you look at it you are working at a disadvantage with the ordinary tractor. To do the best work two operators are required, one on the tractor and one on the implement. In these days of extreme labor shortage this is a tremendous handicap. With the operator on a tractor in front of the implement it is manifestly impossible for him to give the implement attention and make adjustments for varying field conditions without losing time.

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With the Moline-Universal Tractor you sit on the seat of the implement and have perfect control of both implement and tractor. You are in the best position to observe the work, make adjustments and manipulate both tractor and implement. This holds true regardless of the work being done—plowing, discing, harrowing, planting, cultivating, mowing, harvesting, both grain and corn.

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There is nothing new about this, we simply apply a principle which millions of farmers have demonstrated to be sound. The Moline-Universal gives one man control of greater power than is possible with horses, with the same method of handling and as much versatility. With the Moline-Universal one man can farm more land. It is a six-horse unit—easier to control than one horse and capable of doing the work of from 6 to 8 horses.

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FREE LECTURE TO BE GIVEN BY TRACTOR EXPERTS

Realizing that thousands of tractor owners and prospective operators will attend the big Third Annual Tractor Demonstration, September 17-21, the National Automotive School has decided to do some very commendable work. It has arranged a course of free lectures each day during the meet. These lectures will be worth a good many dollars to any man interested in tractors. They will be one hour long, one to be given in the forenoon and one in the afternoon and will be scheduled so as not to interfere with the regular demonstrations. Various instructors headed by M. G. Coles, chief instructor, will lecture on various phases of tractioneering, and the talks will not be dry and deeply technical but rather will be practical and instructive so that anyone can understand. There will be demonstration models of various parts of tractors so that the lecturers can actually demonstrate their talks.

Schedule of Lectures

Following is the arrangement of lectures as prepared by the school faculty:

September 17: Morning, principle of the four stroke gas engine, single, twin and four cylinder types, cylinder design and cooling methods. Afternoon, tractor ignition

September 18. Morning, carburetors and mixtures, handling heavy fuels. Afternoon, Magnetos.

September 19. Morning, bearings and lubrication, oils and greases. Afternoon, How to avoid ignition trouble.

September 20. Morning, breaking in a new tractor. Afternoon, Repairing magnetos without the help of a service man.

September 21. Morning, how to succeed with tractor farming.

Seating arrangements have been made to accommodate a large audience.

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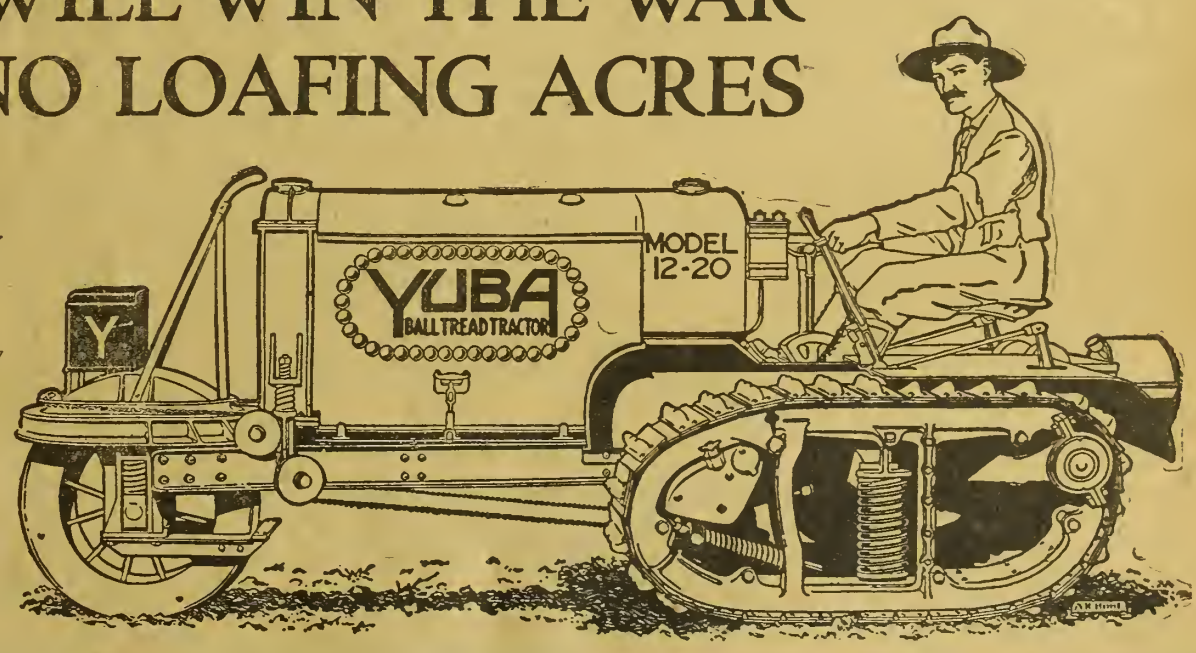

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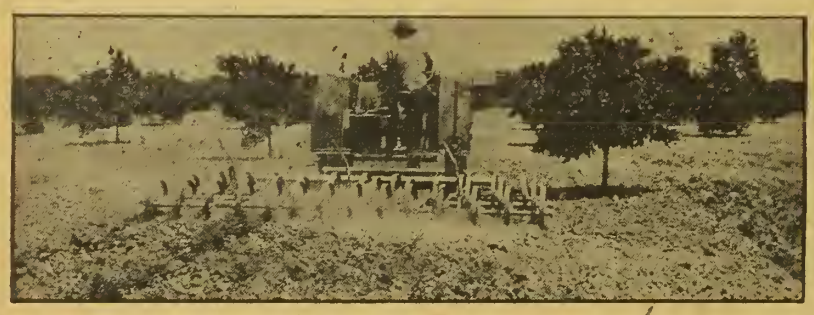

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Orange Details: The Matter of the June Drop

Written for California Cultivator By D. J. Whitney

THE biggest question before Central California orange growers just now is the cause and cure of the June drop, at least it is the most discussed question, and this seems to be the case over all the state. There is no proof yet of the best way of controlling this drop. There are only theories about it and the purpose of this paper is to consider these theories from a practical standpoint as they relate to this district and in that way to keep growers from trying some new and unusual way of handling their orchards next spring.

Personally the writer feels that there is no patent way of getting around this trouble outside of giving the trees good, standard care and keeping them growing as vigorously as possible, and that the safest thing now is to follow standard methods until summer cover crops and other theories have been successfully tried out in the immediate vicinity.

In this connection it is interesting that a paper in another part of the county had a widely copied editorial of the successful set of oranges in an orchard near here where alfalfa was planted between the rows, the alfalfa breaking the heat and keeping the fruit on the trees. There may be such an orchard, but nobody around here seems to know where it is. So common sense suggests the wisdom of waiting till a method is successfully tried out in a place where a man can see both method and success with his own eyes before going head first into it.

A ranch manager close by is much interested in the summer cover crop idea as it relates to the June drop and contends that the proper system is to plant a summer cover crop, such as beans, the first thing in the spring, so that it will shade the ground during June, then keep plenty water on for both trees and cover crop, plowing in the latter about August. Another man arguing to the contrary claims that the ground needs cultivation, which it cannot get when vines are growing on the land. Well, the crop can be grown all right, for the beans can be cultivated until they shade the soil and after that cultivation will be unnecessary. This is shown in the numerous bean crops grown around here in late summer and fall in young orchards.

Flaws in the Plan

The weaknesses of the plan would seem to be these: Wherever oranges are extensively grown, water in time becomes very expensive and not overly abundant. Much surplus water is rare, but a summer cover crop calls for a lot more water than the trees alone would need. This is a very important objection and would prevent summer cover crops in a large majority of cases even if they should seem helpful otherwise.

In the next case, when the cover crop matured it would have to be disposed of. While moist and green it will keep the ground somewhat loose. Say that beans were grown, and these seem to be the best crop for the purpose. When the vines matured the leaves would shrivel and fall; the sun would strike the ground and the land would have to be plowed. There is a faint prospect that disking might do and if so, there would be no particular harm done, but plowing probably would be required.

Personally the writer would be afraid to hurt the crop by going over all the land in midsummer with a turning plow while the oranges were developing rapidly and the trees growing their best. The leaves need all the water they can get at that time, and to shear off a lot of the roots in about the hottest season of the year looks like poor policy.

Perhaps this program would be unnecessary, but it is the program that interested growers think best fills the summer cover crop theory, and if there is a more promising theory they ought to learn it before trying the above plan. It seems positive that if the crop covered the soil in June it would have to be plowed under in late summer, and it also seems positive that the root cutting at that time would injure the trees.

An alternative plan might be to grow sweet clover (melilotus), between the trees, mowing it, if necessary, and leaving it on the ground during the summer and plowing it in during the fall. This would overcome objections which could be applied to a short season crop, like beans.

Winter Growth Seems Best

For various reasons the logical time for growing humus makers in orange orchards seems to be winter. This has been the rule since fruit growing became a business here. In winter the trees are nearly dormant and grass or weeds can run riot without robbing leaves of plant food or moisture. In the other system the cover crop is eating plant food and drinking water at full speed at the very time that the orange leaves are trying to do the same. So, in winter there is no competition between cover crop and orange tree while in summer there is.

Further, in winter there is usually plenty of moisture provided by nature, and if rains do not come irrigation can be used. Evaporation then is small. In summer evaporation is terrifically rapid. An orange tree, or any other tree does not seem to be made to share the land with other crops; it is a hearty feeder and needs all the moisture and food that the soil can provide. It is true that alfalfa and fruit trees now and then do well together but the thing is yet an experiment and gives little promise of becoming a very common method, on old orange orchards at least.

Crops Hard to Plow Under

Then there is this very great objection to the summer cover crop, the difficulty in getting it well into the soil. Winter cover crops are said to be fine, but they are only used on less than half the orchards for the reason, in most cases, that they are too hard to plow under. It depends upon the soil largely, but around here it is usually found that when a man has a big cover crop on heavy soil, particularly when the winter is so wet that he cannot get onto the land until late, he has a terrible time getting the veg-

NORWALK TIRES

Some Rubber

Hand Made

We will exhibit at the Tractor Demonstration

Factory Distributors:

Lichtenberger-Ferguson Co.

Los Angeles Fresno

San Francisco

etation under, and his land is rough until well into the summer, and the trees become yellow and poor.

Now, if a man gets a heavy growth of summer cover crop and has much difficulty in getting it mixed with his soil, he is in a bad way, and he probably will have that difficulty unless he either disks his soft green crop under as soon as the June drop is past or grows sweet clover and mows it and lets it rot on the ground as soon as it reaches any size. There might be a lot more to say on the subject, but until the contrary is proved plenty of irrigation and good summer cultivation looks like the right thing.

Promising Methods

Judging from results in this vicinity abundant irrigation seems to be one of the best things. Let the ground have sufficient moisture at all times. A certain man has a good deal better crop than his neighbors because the oranges stuck on the trees better in June. He attributes it in part to giving the land a good irrigation in December when he decided that the rains were holding off too long. Then, in spite of high fertilizer prices, he gave the orchard a slight dressing with nitrate of soda and sulphate of ammonia in the spring. In other words, he kept the trees strong and growing.

The next step is to keep plenty of water in the soil at all times. In the previous paper it was pointed out how the orange tree quit growing when moisture got scant and started up in a new place at the next irrigation. When growth is checked it is likely to be checked in the fruit, which has nothing else to do than to drop off, whereas if there is so much moisture in the soil that there is no check in growth the fruit can keep developing, save for a natural drop which is unavoidable and frequently beneficial. In more than half the orchards this year and last year much of the June drop can be directly traced to the growers planning to irrigate when they thought the trees needed it; then a hot spell came along and before they could irrigate the whole orchard a lot of the fruit was off. It is a bad business to wait till a job is absolutely necessary before doing it. If they had started two weeks before they thought they had to the trees never would be in danger. After all irrigation lies at the foundation of nearly everything in orange growing.

Finally, in the view of the writer, after irrigation and soil handling, the biggest and most neglected opening in orange tree vigor is systematic pruning, far heavier than has been used yet as a rule. Pruning puts vigor in every kind of a tree; it puts vigor into orange trees, and vigor is what is needed in putting fruit on a tree and keeping it there.

AVOCADO MEETING

The California Avocado Association will hold its semi-annual convention in conjunction with the California Liberty Fair in the Assembly hall, October 19. In connection with the meeting, at which a general program of interest to avocado growers will be given, there will be an exhibit of avocados and avocado products. In fact this will be maintained during the entire fair, October 12-26. Members of the association will hold their annual banquet on Friday evening, the 18th.

The avocado growers are a live bunch and will put up a good show of fruit. The officers of the association are: President, Wm. H. Sallmon, San Diego; vice president, J. M. Elliott, Los Angeles; secretary and treasurer, W. L. Hardin, 623 South San Pedro Street, Los Angeles.

BEANS BELOW NORMAL

Ralph D. Robertson, farm adviser of San Joaquin County, advises the California Bean Growers' Association that conditions in San Joaquin County indicate a falling off in the production of beans in that important district. His report is as follows:

"Red spider has been prevalent and will decrease yields. This has been an unusually dry season and in many sections even where irrigation water was available the beans show the effect of the drouth.

"I have not been able to ascertain the exact acreage planted to beans but I do not think it is far different from that of last year, which was almost double the normal acreage. Last year many people planted beans on land that was not adapted to their culture. This was true particularly in the South San Joaquin irrigation district. I would say that the yield will be less than that of 1917."

TRACTOR POINTS

Flies dont hurt the tractor.

The tractor goes to work when you want it.

The farms of the country require more power than do the factories.

One acre out of four under cultivation is farmed for the benefit of the horse.

Farm labor is increasing in cost—one reason for the development of the tractor.

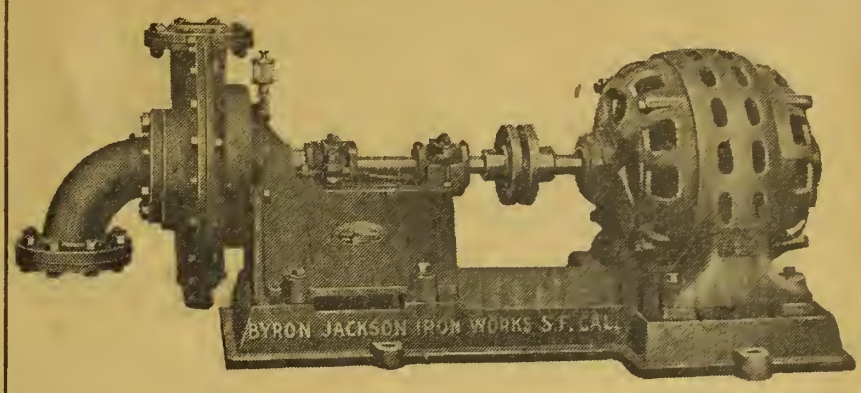
The life of a tractor depends upon the number of hours it is used and the care that it gets.

The tractor will never replace the horse; it will only do his unprofitable work on a profitable basis.

The first cost of a tractor is less than the first cost of good horses capable of doing the same work.

Almost half the gross cost of operating an ordinary farm is made up of horse labor. (Extension Bulletin No. 15, Minnesota Farmers' Library).

A member of the United States department of agriculture says that farmers lose millions of dollars annually because their plowing, tilling and threshing are not done at the right time.



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"Byron Jackson" Pumps meet every water condition

Write us giving your water conditions and requirements.
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Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

See the "Caterpillar" Tractor

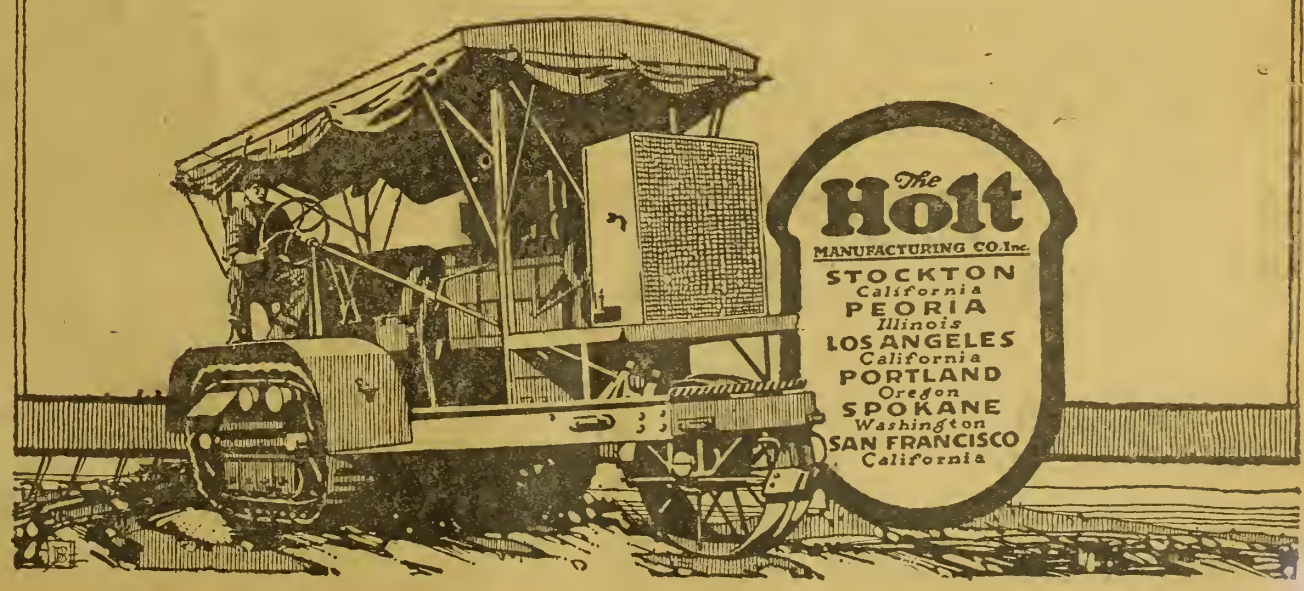
at the Los Angeles Demonstration

America must feed the world—a task that can be accomplished only by the employment of the most efficient methods and machines. It is, therefore, the patriotic duty of every farmer to visit the Los Angeles Demonstration and learn the "how and why" of modern power-farming.

See the "Caterpillar" Tractor there and learn why this tractor stands supreme. Study its construction—use of the highest grade materials, workmanship and design make this tractor able to do work that can be done by no other kind of tractor power, and to stand up for years of service under the most severe conditions. Learn how the tractor can improve your crops, increase your profits, lessen your labor and lessen costs.

"Caterpillar" Tractors have proved their merit on the battlefields of France. For more than a decade they have served the farmers of this country and every other agricultural nation. Thousands of satisfied owners testify to the superiority of this tractor. And the "Caterpillar" Tractor will do for you what it has done for others. Now, more than ever before, you should adopt this tractor for your work. See it at the Los Angeles Demonstration, or write today for complete catalogue.

CATERPILLAR
Reg. U.S. Pat. Off.



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Killefer Quality — Killefer Efficiency

Real Tractor Implements
Built for Western Conditions

We will be pleased to see you at the big Tractor and Implement Demonstration to be held at Los Angeles, Sept. 17th to 22st.

Our full line of Tractor Implements, 32 in all, will be shown in operation.

Some new developments in tractor tools:

Automatic Lift Subsoilers
Automatic Lift Gang Plows
Automatic Double Disc Harrows

This Disc Harrow is the greatest development in Tractor Implements of the day. The only automatic shift disc on the market. It is a wonder. If you need a disc harrow, you will buy this one when you see it.

Do not miss seeing these tools; make yourself at home at the Killefer Tent.

Note—The location of the Tractor Demonstration has been changed from Whittier Boulevard to La Brea Road and Wilshire Boulevard, six miles west of the business center of Los Angeles.

2209-2221 Santa Fe Ave. Los Angeles, California

A Short Way to Make a Long Saving—Use

HAUSER'S Violet Brand
SHORTENING

Housewives will find this Local Product a most satisfactory aid in good cooking.

Upon request we will send a booklet "War Economy Recipes."

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THE FARQUHAR VIBRATOR SEPARATOR

Past the Experimental Stage
Eleven different models, with or without Engine, mounted complete
Ranging in Price from $210 to $1,000
All Repair Parts Carried

Guaranteed by "The House of ARNOTT"
Ask The Grower Who Owns One
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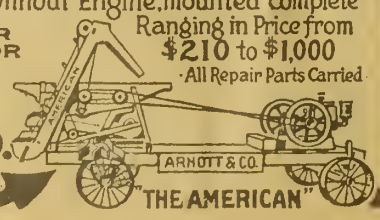

"THE AMERICAN"

ARTILLERY OF AGRICULTURE

Continued from Page 251

Weinstock-Nichols Co., automobile accessories, tires
Valvoline Oil Co., oils.
Union Tool Co., tractor.
Premier Burner Co., oil burner.
Sperry Flour Co., cereals.
E. N. Smith Co., brake linings.

DEMONSTRATION NOTES

New Men with Dauch Mfg. Co.

J. W. Wellington has been made general manager of the Dauch Manufacturing Company of Sandusky, Ohio, builders of the well known Sandusky tractors. Mr. Wellington has a national reputation, having formerly been production manager of the New Castle plant of the Maxwell Motor Company, as well as the Mathews Boat Company. His long experience in the engine and automobile fields will be found of the greatest asistance to the Dauch organization and will mean a decided increase in production.

L. E. Willson has been appointed general sales manager. Mr. Willson was formerly vice president in charge of sales at the Briscoe Motor Corporation. He is now reorganizing his sales connections.

See the Heider at the Demonstration

The Heider tractor will be demonstrated at the Southern California Traction Engine and Implement Dealers Demonstration, by E. P. Bosbyshell Co. of Los Angeles, distributors of the Heider and Rock Island lines. Manufactured by the Rock Island Plow Co., it was to be expected that the Heider should, on being introduced into California, give a splendid account of itself. The tractor has been operated on many farms for several months and is doing splendid work. Three sizes are offered. It was the plan of the company in building the Heider that an all purpose farm tractor be given the purchaser and one which could be used in many kinds of work, at the least expense and with greatest efficiency. The Heider burns kerosene successfully. It has had 10 years actual field work and is highly recommended by many farmers who have operated it.

Tractor Course

Right along with the motorizing of the farm comes the very necessary feature of knowing how to care for and operate a tractor successfully. Farming is being made a more scientific proposition all the time. The National Automotive School, 807 S. Figueroa St., Los Angeles, for a very nominal sum has been giving most useful instruction in traction engineering and in mechanics, too. This school is recognized by a number of the oldest and largest tractor manufacturing concerns that have placed their tractors at the disposal of the school, realizing that it was an institution of vital interest to the tractor and agricultural industries. The school is equipped with a splendid machine plant and up to date tractors and instructors of splendid ability to give every one a thorough course in operating tractors. It would no doubt pay any farmer who has not had previous experience with gas engines and tractors and who has recently purchased a tractor, to take a course at this school or to have some member of his family attend the school.

Tracklayer at the Demonstration

Dealers and farmers who attend the tractor demonstration will be interested in tractors that have been brought to the Coast this year. The tremendous demand for tractors in the Central States has made it impossible for some factories to reach California heretofore. The R. and P. tractor, manufactured by the nationally known Republic Truck Co. of Alma, Michigan, and which will be made in Los Angeles soon to supply the Pacific Coast, will be in operation at the big demonstration, and a feature that has already attracted a great deal of attention is the wheel tracklayer, a combination that gives tremendous traction and pulling power.

The R. & P. is built with a positive drive differential, applying equal power to both rear wheels. All moving parts are enclosed and running in oil, and it is the claim of the factory that the R. and P. is the only tractor having these features and that this is the most powerful tractor drive known.

Tractor and Transplanter

See the exhibit of the Homer Laughlin Engineering Corporation, Los Angeles. This firm will demonstrate the Little Husky tractor, designed by E. F. Sullivan of that firm, a man who has had over 12 years' experience in designing and building the tracklayer type of tractor in California.

"All the weaker features of previous designs made by Mr. Sullivan have been eliminated," said Mr. John Craig of the Homer Laughlin Corporation, in speaking of the new tractor, "and we believe we have made the Little Husky the last word in tractor construction. Our tractor is built entirely in our own plant, which has its own gray iron and semi-steel, and brass and iron foundries."

It is equipped with special chain track invented by the designer of the tractor. This chain track is built on the principle of the coupling of the freight car. The links are made of cast steel and have a ¼-inch plow steel shoe, and replacements can be very cheaply and quickly made. The bearings are Hyatt Roller and New Departure Ball, thoroughly enclosed and dust proof. All movable parts are enclosed in dust proof housings. The system of lubrication is believed to be absolutely perfect. It is a high grade tractor throughout and its performance indicates unqualified success.

This company has brought out the Crawford Transplanting machine, something that gives promise of revolutionizing the gardening industry through solving the task of transplanting cabbage, onions, celery, etc. The Crawford Transplanting machine, operated by a child or farmerette, will do the work of 60 men. The machine was invented by James C. Crawford, an agriculturist at Burbank, a man who has had wide experience in growing Bermuda onions and who has spent five years in developing the machine.

Stinson Tractor and Plow

The demonstration given by the Stinson tractor, which is handled by Arnott & Co., 112-118 S. Los Angeles St., Los Angeles, will be of great interest to all who attend the big event. The Stinson tractor has proven its efficiency and ruggedness in the East and is entitled to a place among the popular farm implement lines handled by this firm for years. The courtesies in service extended the farmers who have been customers of this house will

Power and Mileage

RED CROWN GASOLINE

The full series of high boiling points in "Red Crown" makes power and mileage *sure*. Look for the Red Crown sign.

STANDARD OIL COMPANY (California)

The Gasoline of Quality

Since 1902

Pomona DUPLEX-PLUNGER Pumps

One Pump Will Do Your Work

Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

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Pomona "Made Right" Irrigation Gates and Valves

PRICES RIGHT — QUALITY RIGHT
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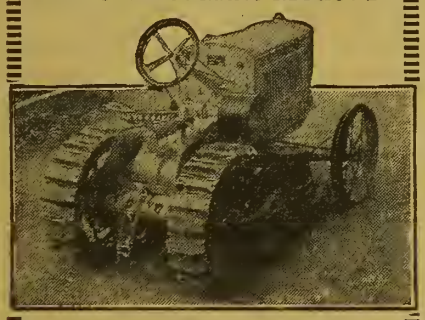
Pomona Mfg. Co.
POMONA, CAL.

Bates Steel Mule Model D



Entered in Tractor Demonstration Sept. 17 to 21
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214-216 No. Los Angeles St., Los Angeles, Cal.
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It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards six times they will not be affected by mildew or red spiders.

FLEUR DE SOUFRE AND ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand, packed in double sacks, are the fluffiest and purest sulphurs that money can buy; the best for orchards and vineyards; the best for bleaching purposes, LEAVING NO ASH.

Try our new brand of VENTILATED Sublimed Sulphur, 100 per cent pure, for making Paste—Atomic Sulphur and for dry dusting.

For Lime Sulphur Solution, use our DIAMOND S BRAND Refined Flour Sulphur, which we will furnish at a price so cheap that you cannot afford to purchase ready-made solutions.

We are equipped to make immediate shipment. Send for illustrated booklet; also price-list and samples.

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— CHEMIST —
Soil, Crop, and Orange Grove Expert
320 Stimson Building Los Angeles, Cal.
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Large Experience Gets Results

make sales easy on the Stinson tractor. The Sanders tractor plow will form an important part in their demonstration and will prove again its ability behind a tractor. Their big display tent full of up to date farm machinery will be turned into a reception room where information and comfortable resting accommodations will be furnished their friends and patrons.

Waterloo Boy

For real service in farm and orchard no tractor sold in California has been more successful than the Waterloo Boy, now a John Deere product, by a recent purchase of the factory building them. Nearly five years ago the first of these was sold in Southern California to Henry Meyer of San Bernardino, who used in the cultivation of his 250 acre orchard and vineyard, to his entire satisfaction and with less than $50 in repair bills, until unfortunately a fire ruined it last winter. Others are in constant service that have been out nearly as long and, as one party said, "She runs as fine as she did when new." Simple in construction, economical as to operation, and durable in every part, the Waterloo Boy is a real success in the tractor line. The distributors, W. L. Cleveland Co., 209 No. Los Angeles St., Los Angeles, will be glad to send printed matter to any who may be interested in this fine machine.

Automatic Disc

A new automatic disc will be one of the welcome and attractive exhibits at the tractor demonstration. It will be exhibited and demonstrated with 31 other farm, ranch and orchard tools by the Killefer Manufacturing Company of Los Angeles. Every farmer who has ever yanked at the angle lever of a big disc firmly held, will welcome the new disc with hitches to change the pitch as well as draw it along. Other up-to-date tools exhibited by this firm will include subsoilers, cultivators, discs, harrows, gangs, weeders and many other tractor implements.

Ziegler Tractor Attachment

Ziegler Tractor Attachment, 611 North Western Ave., Los Angeles, is proving its ability to do the work of six to nine horses plowing, cultivating and general farm work. The attachment can be adjusted to any make of automobile and can be operated by any one who can operate an automobile. They will gladly demonstrate on any ranch within 100 miles of Los Angeles, and those interested in a tractor attachment should avail themselves of this opportunity.

Headquarters

As the location of the tractor demonstration is so easily accessible to the Crescent Bay beaches, the association has designated the well known Merritt Jones Hotel at Ocean Park official headquarters. The management has granted a discount of 33 1-3 per cent.

WORK IT DAY AND NIGHT

To make the tractors perform the most efficient service possible in our food production drive:

1. Don't let the tractor be a slacker. Give it good care and proper attention, but show it no mercy.
2. Use for your neighbor when possible. Exchange work.
3. Use the tractor for heavy work, releasing horses for plowing corn, etc.
4. Be prepared. Have everything ready for continuous work.
5. Do your own tractor work at the earliest practical moment.
6. Remember that experiments and experience prove that early preparation of ground brings higher yields.
7. Work the tractor night and day. Provide light for night work.
8. Use the tractor for pulling harvester. Necessary hitches are easily provided.
9. Give the machine a careful looking over after each day's work. Systematic care insures constant efficiency.
10. Teach some one else the care and operation of the tractor. Girls and young women soon become competent to operate tractors.

NOWADAYS

Beggar—Could you spare a hungry man a nickel?

Cholly—Yes, if you'll tell me where a man can buy anything to eat with a nickel.

Some General Facts---

About the construction of the HEIDER TRACTOR. It is the most advanced type of Tractor construction of the age. It is not a freak—remember that. It is a standard tractor, embodying the features of design and construction that are absolutely known to be correct.

HEIDER TRACTORS are not an experiment. They have years of actual service behind them.

The man who buys a HEIDER TRACTOR, buys a tried, tested and proven power, a real all-purpose farm power plant. It does every job, big or little, that power can be used for on the farm.

See Them at The Demonstration
Los Angeles, Sept. 17-18-19-20-21-22

E. P. BOSBYSHELL CO.
125-27-29 No. Los Angeles St., LOS ANGELES
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What Are YOU Doing To Help Solve The Skilled Labor Shortage?

We Are Doing Our Bit

To help this great problem. You will do yours if you will train yourself for more efficient, more essential, more profitable service. You owe this to yourself and your country. Select one of the following courses—the one best suited to your talents and inclinations—start NOW, with resolution and "the mighty hopes that make us men." BE AN ESSENTIAL MAN.

Tractor Instruction

We teach you Tractor Engineering—thoroughly, practically—affording you actual experience in operating various types of tractors; HOLT CATERPILLAR, INTERNATIONAL HARVESTER, and SAMSON SIEVE GRIP, on our demonstration field. This is a big, growing industry and offers wonderful opportunities to the trained Tractor Engineer, Mechanic, Demonstrator, and Salesman.

Auto Mechanics

We offer you a complete course in Auto Repairing and Driving. You will receive technical instruction and practical training in our public Repair Shop under experts. Over 5000 successful graduates. We fit you for the expert's position either in war duty or commercial lines.

Ignition

We offer an advanced course in electricity and magnetism as applied to the Auto and Tractor, specializing in high and low tension magnetos, coils, dynamos, batteries, armatures, and wiring. Complete equipment for thorough training.

Vulcanizing

An easily learned and profitable trade, very attractive to one able to make the small investment necessary to own and operate his own plant.

Machine Shop Practice

To mechanically inclined boys or prospective Repair Shop owners, this course offers a profitable field. We give a practical course on lathes, shapers, milling machines, etc., including bench and vise work.

Oxy-Acetylene Welding

This course embraces Welding, Cutting and Brazing, practical work on cast iron, malleable castings, steel and aluminum. Our equipment includes Prest-o-Lite, Burdett, Davis-Bournonville and Oxweld systems. Thorough training for shipyard and commercial work. Day and night classes in this course.

We take pleasure in showing visitors through our School

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Calco Troughs cost less than wooden disease traps —and last for years.

Diameter	Depth	Length	Price
10¼ in.	5 5-16 in.	40 in.	$3.70
10¼ "	5 5-16 "	60 "	4.50
14 "	7 3-16 "	24 "	4.55
14 "	7 3-16 "	120 "	9.60

Other sizes from 24 to 120 inches priced from $2.95 up.

Order one Calco Trough—you will want others. Advise size wanted and we will ship immediately.

Circular describing Calco Troughs and other hog products upon request.

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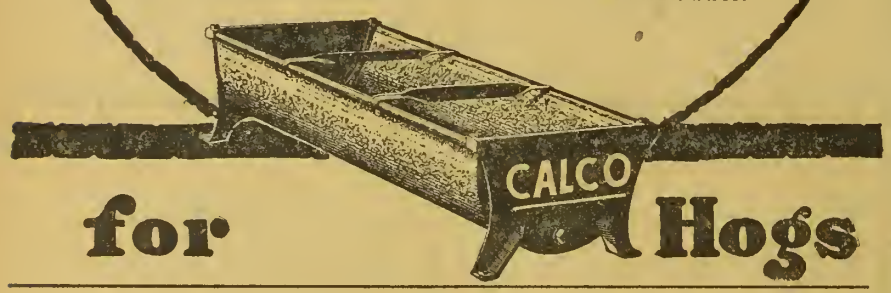

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Come to Stanislaus County for Registered Holsteins

STANISLAUS COUNTY LEADS

All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

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Headed by Hazelwood Mercedes Posch Ormsby. Good young bulls and a few registered cows for sale.
J. A. Pelanda, Rt. B, Modesto, Cal.

HOLMES STOCK FARM
Registered Holsteins of best breeding. Young bulls for sale.
R. L. Holmes Modesto, Cal.

Segis Pontiac De Kol Dutch
Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. E. E. Freeman, Rt. B. Modesto

Thompson's Registered Holsteins
Young bull calves for sale with yearly record backing.
Luther Thompson, Rt. A, Box 351, Modesto Cal.

Our Senior Herd Sire is KING KORNDYKE HENGERVELD ORMSBY 7th
Five of his sisters sold at public auction for $23,800, an average of $4760.
This blood has made some of the world's greatest producers.
Our junior herd sire is TOYON KING KORNDYKE SOLDENE, son of a 33.23 pound daughter of King Hengerveld Aaggie Fayne.
Young bulls for sale. No females.
REGISTERED BERKSHIRE BOARS, sons of the $1500 boar Star Leader, for sale.

Kounias Registered Stock Farms, Modesto, Cal.

Hollow-Hill Farm Guernseys

On account of his close relationship to the balance of our herd we are going to sell our JUNIOR HERD SIRE, the four year old bull

Cora's Glen 31541

Grand Champion at Riverside County Fair in 1916

His sire is an A. R. bull which has two A. R. daughters.
His dam has an A. R. record of 12,286.3 pounds of milk and 676.31 pounds of butter fat, average 5.5 per cent, made at ten years of age.
He combines the blood lines of many of the great members of the breed and traces 25 per cent to Imp. Masher's Galore and 12½ per cent to Governor of the Chene.
He is a show bull and is backed up by production records. Inquire of

Hollow-Hill Farm, Colton, Cal.

Bull calves at reasonable prices.

Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, $2145 cash awards. Write to

M. Bassett

Hanford, Kings County, Cal.

Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY
IT MAKES THEM FAT

Hauser Packing Co. Los Angeles

Sheep Raising in Japan

Written for California Cultivator By R. S. Vaile

FARMER'S Bulletin No. 840, which deals with farm sheep raising in the United States, makes this statement in the introductory remarks: "Wool values were advancing before the outbreak of the war. Although the consumption of wool was increasing, no foreign country, with the exception of South Africa, seemed able to increase its exports." In view of such a statement, the present movement in Japan to establish a large sheep raising industry becomes of considerable economic importance.

Dr. Tanimura of Tokyo, who has just been in the United States in the interests of the sheep production propaganda for Japan, crossed the Pacific on the same steamer with the writer, and it was therefore my very good fortune to receive from him at first hand a statement of his aims in this matter. For some time past Dr. Tanimura has been interested in the agricultural development of Japan, with the thought ever in mind of the economic independence of the Island Empire. Although a lawyer by profession, he spent some time in the United States studying agriculture, particularly at Cornell University, in order that he might have a better understanding of the problems and the possibilities connected with their solution. A few years ago he was instrumental in introducing from the United States many hundred varieties of commercial plants in an experimental way, nearly all of which have grown, and some of which have become widely distributed.

The present enterprise with which Dr. Tanimura has identified himself is the introduction of sheep. It is purely a commercial scheme in that he is attempting to interest capital from various sources to undertake the stocking of the hill pastures. From Japan he hopes to see the industry spread to Manchuria and Siberia, but that will be another chapter, as it involves the question of international relations in the Far East. The plan is to introduce every possible variety of sheep for the purpose of determining which one or ones may be best adapted, or for the purpose of having good foundation stock on which to build up new strains particularly fitted to the conditions of Japan.

As Dr. Tanimura told of his ambitions (and I may say that a large production of wool is involved in the dream) it was difficult for the writer to picture the possibility of such a movement making any great amount of difference in world commerce in wool. There were certain preconceived ideas of Japan, including an extreme density of population throughout the islands, and the farming of all the hills from base to top with a system of terracing and small plots of rice or other grains. This conception of Japan did not seem to permit any extended grazing industry nor even the converting of field crops into animal products, with the resulting loss in total human food that is inevitable in any live stock farming.

But Japan as I saw it was very different from this preconceived idea. There were certain terraced hills, to be sure, but certainly less than 50 per cent of those which we passed coming down the coast from the Bay of Sendai to Yokohama, or on the overland trip from Tokyo to Kobe, or going through the Island Sea, were farmed or even inhabited. Many of them were thickly forested and whether tree covered or not, there seemed to be a luxurious growth of forage grasses. The seasons in Japan are such as to maintain such a growth almost continuously throughout the year. With such conditions large numbers of sheep could be supported, literally "in clover", at no expense except for labor of herding, for there is no time of year when shelter is absolutely necessary. And, it is to be remembered that labor is the cheapest thing there is in Japan.

Now that I have seen just a little of Japan I can readily picture a wool producing industry that may have a very material effect on world commerce. Mills will doubtless be erected in Japan to handle the product, and it is easily possible that the bulk of the woolen trade of the East will go through Japan, for she is extremely quick in adopting modern methods and, because of her cheap labor, she is often able to beat the originator at his own game. And the hills of Japan, if grazed with the thoroughness and care that the Japanese is capable of, will carry a large addition to the world's supply of both mutton and wool.

Live Stock at the State Fair

ASKED as to the outstanding feature of the live stock exhibit at the recent state fair, one of the judges said: "Your breeders have learned to fit their stock for the judging ring. There is a vast improvement in this respect. I have never attended a fair in the West where better fitted stock was exhibited."

On the other hand we heard a hog breeder say: "There is one satisfaction in this fair; the hogs are not overconditioned." In former years hogs have been brought there so fat that the heat overcame numbers of them. We believe not a hog was lost this year.

It was not large, but a most satisfactory showing of California live stock.

BEEF CLASSES

The beef cattle show afforded a wonderful demonstration of what can be accomplished in the way of beef making on the Pacific Coast when good blood and good feed are combined.

Shorthorns

The Shorthorn show was particularly strong, but there should be more herds represented. There should also be many more Herefords and Angus.

All of the beef breeds were judged by John Robbins of Horace, Indiana, a veteran breeder of Shorthorn cattle.—W. S. G.

Exhibitors: W. M. Carruthers, Live Oak; T. S. Glide, Davis; Hopland Stock Farm, Hopland; Pacheco Cattle Co., Hollister; Roselawn Stock Farm, Woodland.

Bulls, three years or over—, 1, Count Glory, Carruthers.

Bulls, two years old and under three—, 1, Hallwood Villager, Carruthers; 2, Hopland Lord, Hopland; 3, Pacheco Lad 92nd, Pacheco.

Bull, junior yearling—, 1, Pacheco Marshall, Pacheco; 2, September Knight, Glide; 3, Hopland Cumberland, Hopland; 4, Pacheco Lad 109th, Pacheco; 5, Kings Knight, Glide.

Senior bull calf—, 1, Roselawn Champion, Roselawn; 2, Pacheco Dale, Pacheco; 3, Roselawn Diamond, Roselawn; 4, Live Oak Flash, Carruthers; 5, Live Oak Flash 2nd, Carruthers.

Junior bull calf—, 1, Pacheco Lad 145th, Pacheco; 2, Live Stock Glory, Carruthers.

Cows, three years old or over—, 1, Mischief E. 3rd, Roselawn.

Cows, two years old and under three—, 1, Pacheco Lass 103rd, Pacheco; 2, Spicy Lady, Glide; 3, Broadhooks Sultan, Carruthers; 4, Roan Duchess, Roselawn.

Senior yearling heifer—, 1, Lady Roberta, Carruthers; 2, Pacheco Lass 103th, Pacheco; 3, Pacheco 111th, Pacheco; 4, Mayfield Ury, Carruthers; 5, Cheerful Maid 3rd, Glide.

Junior yearling heifer—, 1, Pacheco Lass 118th, Pacheco; 2, Roselawn Blossom, Roselawn; 3, Mysie's Rose, Glide; 4, Little Sweetheart, Glide; 5, Hurst 2nd, Mayfield.

Senior heifer calf—, 1, Kings Countess, Glide; 2, Lovely's Pride 3rd, Roselawn; 3, Cheerful Maid 4th, Glide; 4, Jane 2d, Hopland; 5, Golden, Hopland.

Junior heifer calf—, 1, Pacheco Lass 131st, Pacheco; 2, Village Lassie, Glide; 3, Roan Belle, Roselawn; 4, Hopland Dixie, Hopland; 5, Crimson Flower, Carruthers.

Grand champion bull, Count Glory, Carruthers. Reserve senior champion bull, Hallwood Villager, Carruthers. Junior champion bull, Roselawn Champion, Roselawn Stock Farm. Reserve junior champion bull, Pacheco Marshall, Pacheco. Senior champion cow, Mischief E III, Roselawn Stock Farm. Reserve senior champion cow, Pacheco Lass CVIII, Pacheco. Junior champion cow or heifer, Pacheco Lass 118th, Pacheco. Reserve junior champion cow or heifer, King's Countess, Glide. Reserve grand champion bull, Roselawn Champion, Roselawn. Grand champion cow or heifer, Mischief E. III, Roselawn. Reserve grand champion cow or heifer, Pacheco Lass 118th, Pacheco.

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For the first time a herd of Aberdeen-Angus cattle of superlative merit was exhibited. This was from Congdon & Battles of Yakima, Washington.

The sleek, well fitted black cattle were much admired. They are veritable "cylinders of beef," their carcasses being plump and mellow and well rounded. They have no horns, are affectionately called "doddies" by their admirers, and have always been consistent winners in fat cattle classes both in America and in Great Britain.

All awards to Congdon & Battles, Yakima, Washington.

Herefords

Representatives of five herds made up the Hereford show. Bunting won both grand championships.—W. S. G.

Exhibitors: John A. Bunting, Mission San Jose; H. H. Cazier & Sons Co., Wells, Nevada; W. H. Duke, Likely; E. M. Simpson, Hood; University of Nevada, Reno, Nevada.

Bulls, two years and under three—, 1, Beau Randolph, Simpson.

Bull, junior yearling—, 1, California Prime Donald, Bunting; 2, Standard Boy, Cazier; 3, Alamo Reuben, Duke.

Senior bull calf—, 1, Nevada Lad 8th, Cazier; 2, Alec, Bunting; 3, Beau Del Sierra 4th, University of Nevada; 4, Anxiety, Bunting.

Junior bull calf—, 1, Nevada Lad, Cazier.

Cows, three years old or over—, 1, Ramona, University of Nevada.

Cows, two years old or under three—, 1, Baby Bunting, Bunting; 2, Madame Juanita, Simpson.

Senior yearling heifer—, 1, Grace Bunting, Bunting; 2, Nevada Cazier, University of Nevada.

Junior yearling heifer—, 1, Miss Betty, Bunting; 2, Standard Eyes, Cazier; 3, Alyandia, Bunting; 4, Martha Christian, University of Nevada; 5, Hebe 2nd, Cazier.

Senior heifer calf—, 1, Isis, Cazier; 2, Venetia 2nd, Cazier.

Junior heifer calf—, 1, Standard Eyes 2nd, Cazier; 2, Standard Girl, Bunting.

Senior champion bull, Beau Randolph, Simpson. Junior champion bull, California Prime Donald, Bunting. Reserve junior champion, Nevada Lad VIII, Cazier. Senior champion cow, Baby Bunting, Bunting. Reserve senior champion cow, Ramona, University of Nevada. Junior champion cow, Miss Betsy, Bunting. Reserve junior champion cow, Isis, Cazier. Grand champion bull, California Prime Donald, Bunting. Reserve grand champion bull, Nevada Lad VIII, Cazier, Grand champion cow, Miss Betty, Bunting. Reserve grand champion cow, Baby Bunting, Bunting.

DAIRY CLASSES

F. H. Scribner of Los Angeles judged all the dairy classes. His awards were generally commended. Mr. Scribner's ability as a judge comes not only from intensive study of the dairy type, but lifelong work with the pure bred. He was the owner and breeder of Loretta D. when she made her world winning at the St. Louis Exposition.

Jerseys

Besides the regular premium awards in the Jersey classes there were special features which kept Jersey people interested in some feature nearly every day. One of the most interesting events was that of the awarding of the great silver cup illustrated in last week's Cultivator. There were only three entrants, this, the first year of offering this cup. D. F. Conant, Guy H. Miller and J. E. Thorp. Each herd consisted of five cows. Mr. Thorp proved the winner.

Exhibitors: Mrs. C. A. Briggs, Sacramento; D. F. Conant, Modesto; Dr. H. W. Hand, Orland; C. D. Hayworth, Modesto; N. H. Locke Co., Lockeford; C. G. Marchus, San Pasqual; Guy H. Miller, Modesto; J. B. & J. E. Thorp, Lockeford; J. E. Wherrell, Riverside; S. F. Williams, Orland.

Bulls, three years old or over—, 1, Altama Interest, Miller; 2, Lorna's Altama Interest, Hayworth; 3, Alva Lady's La Fosse Boy, Williams; 4, Imp of L., Thorp; 5, Golden Maidiken's Boy, Williams.

Bulls, two years and under three—, 1, Jolly Senator Raleigh, Thorp; 2, Valet's King of L., Locke; 3, King Leda's Foxy Laddie of L., Locke; 4, L. Midget's Valet of L., Locke; 5, Lucy Warder Foss Boy, Williams.

Senior yearling bull—, 1, Liby's King of L., Thorp; 2, V. Brighteyes King of L.; Locke; 3, V's Katrina's King, Locke; 4, X. D. King of L., Locke; 5, Fox's Sunshine Valet, Locke.

Junior yearling bull—, 1, Jap's Perfection Owl, Miller; 2, Lady Midgeto Valet of L., Locke; 3. Blossom's Liberty Bond, Hand.

Senior bull calf—, 1, Golden Legacy's Champion, Wherrell; 2, Pearl's Altama Underwood, Miller; 3, V's Xmas D's D. L. King of L., Locke; 4, Interested Insie's Owl, Marchus; 5, Brighteyed Lassie's Fox, Thorp.

Junior bull calves—, 1, Lorita's Majestic Noble, Miller; 2, Lady Dolly's Gold Dust of R. S. M., Conant; 3, Chappie of M., Thorp.

Cows, four years old or over—, 1, Salome of Mossdale, Thorp; 2, Goldie of Venadera, Miller; 3, Valet's Golden Biddy of

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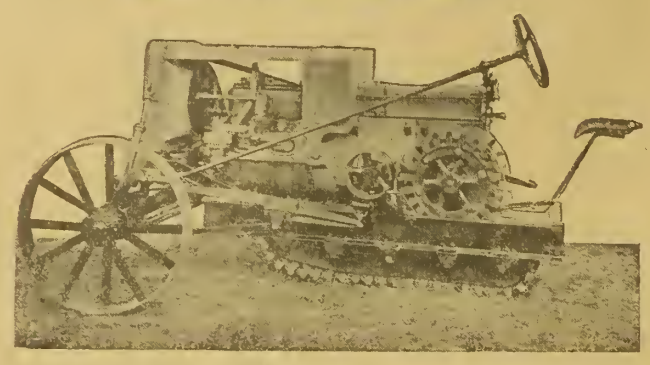

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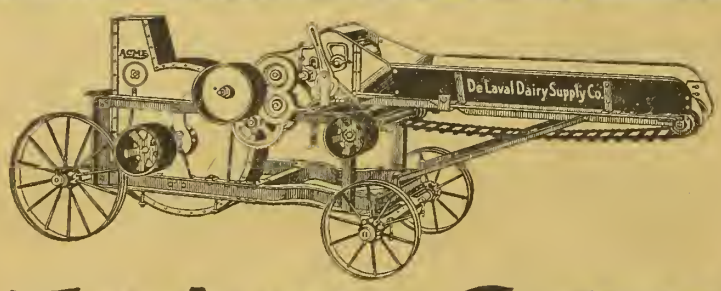

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Cows, three years and under four—, 1, Miss Daisy of Mossdale, Thorp; 2, Valet's Sweet Violet, Thorp; 3, Noble Jolly's Lady, Hand; 4, Cygna of Venadera, Miller; 5, Falretta of Rico Vegas, Hayworth.

Cows, two years and under three—, 1, Angela of Venadera, Miller; 2, Nomie of Mossdale, Thorp; 3, Brilliant Jersey Queen, Hand; 4, Alta La Fosse, Williams; 5, Rose of Mossdale, Thorp.

Senior yearling heifers—, 1, Lucile of Venadera, Miller; 2, Holly's Dot, Hayworth; 3, Daisy's Lass of M., Thorp; 4, Bess of Mossdale, Thorp; 5, Blue Belle of Rico Vegas, Hayworth.

Junior yearling heifers—, 1, Aleta Beau, Williams; 2, Vega of Venadera, Miller; 3, Laura of Rico Vegas, Hayworth; 4, Cantata of Venadera, Miller; 5, Luma's Lola, Hand.

Senior heifer calves—, 1, Kate of Fuimus Farms, Wherrell; 2, Naoma Marie, Williams; 3, Fair's Salome, Thorp; 4, Bonnie of Mossdale II, Thorp; 5, Eloise of Venadera, Miller.

Junior heifer calves—, 1, Mary of Fuimus Farms, Wherrell; 2, Ada of Venadera, Miller; 3, Sissie of Mossdale, Thorp; 4, (unnamed), Mrs. Briggs; 5, King Hanford's Anna Girl, Williams.

Aged herd—, 1, Miller; 2, Thorp; 3, Hayworth.

Breeder's young herd—, 1, Miller; 2, Thorp; 3, Williams; 4, Hayworth.

Get of sire—, 1, Get of Altama Interest, Miller; 2, Get of Imp. King's Valet, Thorp; 3, Get of You'll Do Oxford's Lad, Wherrell; 4, Get of Valet's King of L., Locke.

Produce of dam—, 1, Produce of Benedita of Venadera, Thorp; 2, produce of Violet of S. B., Thorp; 3, produce of Anna Buruer's Double, Williams; 4, produce of Valet's Violet of L., Locke.

Cows in milk—, 1, Thorp, cup; 2, Miller; 3, Conant.

Grand champion bull, Altama Interest, Miller. Grand champion cow, Salome of Mossdale, Thorp. Reserve grand champion bull, Jolly Senator Raleigh, Thorp. Reserve grand champion cow, Mary of Fuimus Farms, Wherrell. Senior champion bull, Altama Interest, Miller. Senior champion cow, Salome of Mossdale, Thorp. Reserve senior champion bull, Jolly Senator Raleigh. Reserve senior champion cow, Goldie of Venadera, Miller. Junior champion bull, Golden Legacy's Champion, Wherrell. Junior champion cow, Mary of Fuimus Farms, Wherrell. Reserve junior champion bull, Jap's Perfection Owl, Miller. Reserve junior champion cow, Aleta Beau, Williams.

Other awards in dairy classes, with comment by C. L. Hughes, next week.

THE SHEEP SHOW

The California state fair deserves to have many times the number of sheep that were shown this year. The flocks that were represented were of very high quality and attracted much attention, but there should be 15 or 20 flocks of each breed.

Bishop Bros. of San Ramon won all prizes on Shropshires; Bullard Bros. of Woodland, most of the prizes on Rambouillets; John Marble of Redlands, the Dorset prizes; Jos. Levy of Manteca, the Hampshires; and the University of Nevada, the Corriedale prizes. There were also some very fine pure bred and grade Corriedales on display, but not shown for prizes, by Ellenwood and Ramsey of Red Bluff.

All of the classes were judged by Prof. R. F. Miller of the University Farm.—W. S. G.

WHO WILL BUILD A SILO?

The best way that we know of to get the full value of the corn and milo stalks is to make them into silage. This means the construction of a silo. We do not care what kind of a silo is built so long as it is serviceable. The stave silos are good, the concrete silo is better and the wooden hoop silo is serviceable and cheap. If anyone contemplates building, we would like to help. Call on us.—E. O. Amundsen, Farm Adviser, Placer County.

ANNUAL MEETING STATE ASSOCIATION POLAND-CHINA BREEDERS

Written for California Cultivator
By C. A. Briggs

Among the notable gatherings in Sacramento during state fair week was the annual meeting of the State Poland-China Breeders' Association—which was largely attended. Much business of importance was transacted. A number of important recommendations were made to the state fair association. Officers elected for the coming year were as follows; W. Bernstein, Hanford, reelected president; Geo. V. Beckman, Lodi, vice president; A. D. McCarty, San Francisco, secretary and treasurer; directors, Fred Gatewood, Fresno, H. I Marsh, Modesto, M. Bassett, Hanford, W. A. Young, Lodi. W. A. Young was also elected as manager of all fair matters with charge of exhibit decorations.

ANNUAL MEETING STATE JERSEY CATTLE BREEDERS' ASSOCIATION

Written for California Cultivator
By C. A. Briggs

The Jersey men of the state had their annual banquet and business meeting in Sacramento during the state fair. Following an address by the president, Dr. H. M. Hand of Orland, other addresses of great interest were made by Judge Peter J. Shields who spoke on the Jersey, "His First Love." Guy H. Miller reviewed the history and helpful work of the American Jersey Cattle Club. Prof. True gave an interesting talk on the relation of the university to the breeders work. Judge F. H. Scribner talked of type. James W. Henderson, Jr. gave a very interesting address on marketing problems. Ruland Hardy finished the list of speakers with a talk on his work at Anchorage Farms.

Officers elected for next year were: Dr. H. W. Hand, Orland, president, reelected; G. H. Miller, Modesto, vice president; J. E. Thorp, secretary and N. H. Locke of Lockeford, both reelected; directors, Mrs. Ruth Hardy, Orland; C. G. Marchus, Escondido; E. E. Greenough, Merced. Eight new members joined the association and much helpful matter was talked over. The meeting was full of "pep" and enthusiasm and a spirit of all get together for the Jersey was manifest.

SHORTHORNS AT STATE FAIR

The show of Shorthorns at the Sacramento State Fair this year is as usual excellent. Honors for both grand champion and rescrve champion bull went to Carruthers Stock Farm, of Live Oak, while Rose Lawn Stock Farm of Woodland carried off the award for grand champion cow. On Monday evening the Shorthorn men held a little get-together banquet and meeting at the Traveler's Hotel, at which 30 were present. Mr. Robbins, who acted so efficiently as judge, told of the pleasure it had given him to hand out the Shorthorn awards, and stated that the average of the cattle exhibited in every way equaled the Eastern and Middle Western state fairs.

An interesting address was made by Professor True, who told of the progressive methods employed by range men in the Hawaiian Islands and informed his hearers that they could well profit from the principles practiced there.

Other addresses were made by Pres

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F. P. Hall Perris, Cal.

DUROC ANNUAL

The Western Duroc-Jersey Association met in Sacramento the state fair week and after the banquet and sociable time proceeded to discuss matters of particular interest to Western breeders. Officers for the coming year are as follows: President, Fred Johnson, Napa; vice president, H. H. Braly, Newbury Park; secretary, J. E. Thorp, Lockeford; treasurer, V. H. Dolcini, Davis. Directors: D. H. Graham, Lancaster; W. N. Way, and H. P. Slocum, Willows. A campaign for new members resulted in the addition of several names to the membership roll, and it was decided to hold another meeting in Los Angeles at the time of the Liberty Fair and make another campaign for members in the southern end of the state. Members present were: W. N. Way, Elmer Lamb. W. W. Everet, H. H. Braly, R. Q. Wickham, J. E. Thorp, Fred Johnson. A. J. Welch. D. O. Brandt, D. H. Graham, H. P. Slocum, J. J. Merkley, H. C. Witherow, V. H. Dolcini.

CATTLE AUCTION SALE IN NEVADA COUNTY

The Nevada County farm bureau will hold a cattle auction sale at M. B. Church's ranch, The Lime Kiln, on Wednesday, September 25. The Lime Kiln ranch is in Nevada County about two miles off the Grass Valley road. The sale will probably commence at about 10 a. m. Everybody is invited to come and bring their lunch and make it a big "get-acquainted" day. These auctions are sure to grow and will soon include hogs and sheep as well as cattle.

RECORD SHEEP PRICE

Returning from the annual sale of the National Wool Growers' Association held at Salt Lake City, Charles A. Kimble of Hanford reports a record sale in all sheep stock. Mr. Kimble states that $6200 was paid for one Rambouillet buck. All prices ranged higher than usual. Mr. Kimble and Butler Bros. of Woodland, purchased a car of Rambouillets, most of the animals being brought to Kings County. Butler Bros. paid $3000 for one of their Rambouillets. The sale was attended by sheepmen from all parts of the United States and Canada. Rambouillets at present have the edge on demand, Mr. Kimble declares, owing to the government demand for the better grades of wool.

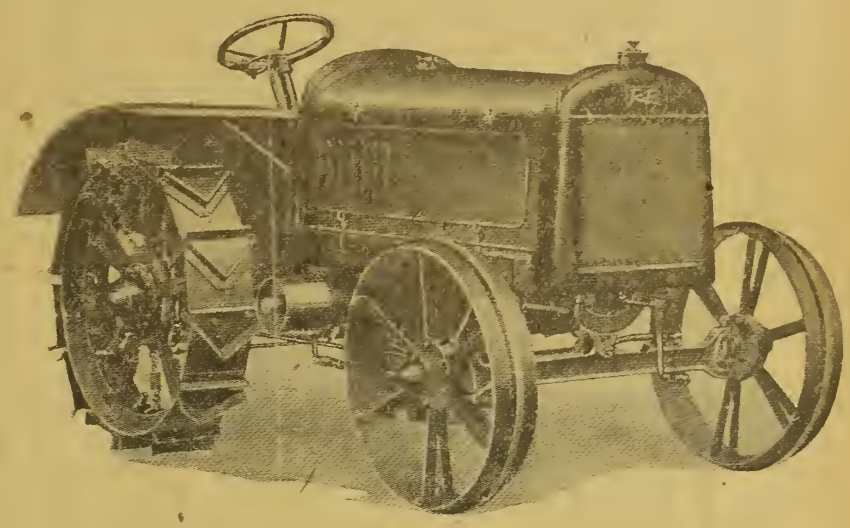
ASSOCIATION COWS MAKE GOOD RECORD

There were last year 472 cow-testing associations in the United States, and monthly records were kept for 216,831 cows, or about 1 per cent of all the dairy cows in this country. The cows in the associations whose records have been tabulated averaged 247 pounds of butterfat, or about 50 per cent more than the average production of all the dairy cows in the United States. If all the dairy cows in the country could be brought up to average of the cow-testing associations, production would be increased 50 per cent in quantity and the cost of production would be considerably reduced.

PREVENTION OF BLACKLEG

"Blackleg, With New Methods for its Prevention and Treatment" is the title of a circular just written by G. H. Hart, associate professor of veterinary science in the University of California and published by the college of agriculture, Berkeley. Stating that blackleg is prevalent quite generally in California, and that cattle from six months to two years dying suddenly with local swellings had probably contracted the disease, Professor Hart advocates the vaccination of cattle on known infected ranges before the blackleg season appears in the spring and fall, and also urges the vaccination of young animals turned out on unknown pastures. In small valley communities or on dairies where no cases of blackleg have been reported this precautionary measure is not necessary, it is stated.

The circular also discusses the use of blackleg vaccine, three forms of which are now being successfully employed: The powdered, pellet or string form; culture filtrate; tissue filtrate. A serum is at present available, declares Professor Hart, which should be used only as a curative agent upon valuable infected cattle. The article is available for distribution.

The R and P Tractor
Made by the Well Known
Republic Truck Co.
Will Be There
TRACTOR DEMONSTRATION
La Brea Ave. and Wilshire Boulevard, Sept. 17 to 22

Do you want to see in action a track laying double laying wheel tractor? Yes Sir—a tractor on wheels yet with a tracklayers grip—with standard high class equipment throughout and the product of some of the best engineering skill in the United States.
This tractor is not an experiment. We have tried it under all California conditions for several months past and many of your neighbors have seen it. It surpassed every expectation. It embodies some new features that will interest you.
The Republic Motor Truck Co. of Cal.
4800 Santa Fe Ave. Los Angeles

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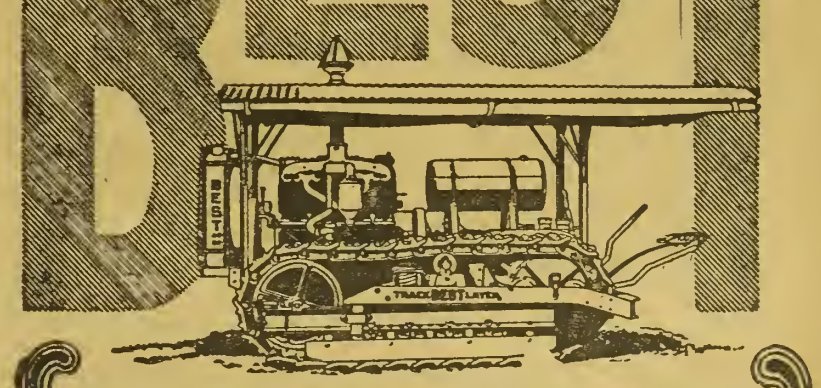
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will be there
Plowing, Harrowing, Discing, Leveling, etc., at the
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TWO MODELS:
The "40" for the moderate sized farm and orchard: does the work of eighteen horses.
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TALK WITH OUR REPRESENTATIVES on the ground.
LEARN about the many exclusive patented BEST features found only in BEST Tracklayer Tractors.
LEARN what BEST Tractors are doing on the farms—in the orchards—freighting—wherever a tractor can be used.
BEST TRACTORS ARE DESIGNED BY C. L. BEST—BACKED BY TWO GENERATIONS OF TRACTOR BUILDERS.
C. L. Best Gas Traction Company
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Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

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That Boss of the Road Overalls are built to stand the hardest knocks of work and play. Genuine, indigo-blue denim that takes the tub test and comes up smiling; "stay-there" seams that can't rip out; big, man-like, *swinging pockets;* hold-fast, patent buttons; reinforced strain points—all the features that make Dad swear by *his* Boss of the Road Overalls.

All of which explains why, in these thrifty times, it is good economy to buy Boss of the Road Overalls.

If you don't know what we mean by *swinging* pockets—your dealer will gladly show you.

Look for the Bull Dog on the label. It is your protection. Never has this trade mark meant so much to you as it does today.

Buy them from your local dealer

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For all kinds of weather and all kinds of wear —for long life and long service

TEST SPECIAL is Guaranteed never to separate in the plies —IF IT DOES, WE WILL GIVE YOU A NEW BELT.

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The Guaranteed Poultry Tonic and Conditioner

It shortens the molting period by weeks, prevents loss during this critical period, makes the hens lay early and often. It brings the pullets to early laying maturity, strengthens and invigorates them for a hard winter's work.

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Our dealer in your town has instructions to supply you with Pratts Preparations under our square-deal guarantee—"Your money back if YOU are not satisfied"—the guarantee that has stood for nearly 50 years.

Write for our New Poultry Book—FREE

PRATT FOOD COMPANY

Philadelphia Chicago Toronto

372

Pratts

The Family Hen

Written for California Cultivator Bq Jean A. Koethen

NEVER since I have been interested in chickens have as many families been raising a few in the backyard as now. There may be fewer commercial poultrymen, but the number of backyard fowl has certainly increased. That this is true East as well as West is shown by the recently published statement that more eggs were received in the New York market between the first of April and the twentieth of May this year than ever before came into that market. Whether this means that the accounts of commercial poultrymen giving up and going into other work were exaggerated, or that all deficiencies have been made up by farmers and backlotters, it is encouraging because it shows that everybody who can keep a hen is keeping one and that there is likely to be no great shortage of eggs and poultry.

The demand for fall hatching eggs seems more brisk than usual, and this is another healthy sign. People are learning that chickens are the best of all meat and that a few fryers in the backyard are a wonderful help when company comes. Spring or fall makes little difference. Here in California we can hatch chicks at any time, and for the backlotter, whose yard space is limited, there is a good deal to be said in favor of hatching a few chicks every month rather than crowding pens and coops in the spring.

Comparison of the respective merits of various breeds will no doubt be a topic of conservation as long as the world stands, and it is well, perhaps, that tastes do differ so widely. The backlotter and the farmer who keep chickens solely for the family, almost invariably appreciate a chicken with some meat on its bones. For such the Plymouth Rock and Rhode Island Red will always be favorites. The family hen must be one that comes to frying size reasonably early and is by no means past her usefulness when she is through laying. She must also lay a good many eggs and be fairly well able to take care of herself without coddling. In other words, she must be vigorous and prolific and a goodsized carcass to boot.

My own experience with Barred Rocks has been very small, but I know they are much liked by many people—more in the East, perhaps, than in California. They have a splendid reputation as table birds, but are accused of excessive broodiness. This matter of broodiness seems a crucial one in heavy hens. Give us a hen that is good for the table, a good layer and not greatly given to broodiness, and we shall hail her as the perfect bird.

Broodiness, like most other faults and virtues, is a matter of strain rather than breed. Among all these heavy breeds you will occasionally find a hen that rarely if ever goes broody. Those who will take the trouble to band these only occasional sitters and use them only as breeders will be quite sure to find broodiness diminish in two generations. That is, it will disappear if the right male is mated to these hens. Twice in my experience with Buff Orpingtons I have reduced broodiness to the minimum only to have all my efforts nullified by bringing in a male from outside. These males must have been the sons of extra broody mothers, for their daughters were far more given to broodiness than the hens from which they were hatched. We shall never arrive at a minimum of broodiness by promiscuous mating.

I have now two Rhode Island Red hens two years old, which have never gone broody more than once a year. Last April or May both went broody and each raised her family. Now (September) they are both laying steadily, and neither has shown the least sign of the maternal instinct since she weaned her brood. I have mated to them the son of one, and expect from this mating hens as little given to broodiness as a Red can be.

But the Rhode Island Red, while she comes as near being the perfect family hen as a bird can, is lacking in one particular. The young stock is slow in reaching frying size. Some of us, too, like a bigger hen for roasting or potpie. For such, and for myself, my choice is the Light Brahma. They are more inclined to broodiness than my Reds, but less than Orpingtons and Rocks. They are steady layers and their eggs are large. As fryers the cockerels are not quite equal to Orpingtons, but they make the best of roasters at about four months of age, and a big plump hen, weighing as many do, from eight to ten pounds, makes a meal for the most festive occasion. Light Brahmas were one of the earliest breeds to be developed in the United States, and while they have been till now little known here in the West they seem to be coming steadily into favor.

Whatever breed is chosen for the backyard, let it be one the whole family likes, and let it be the best of its kind. There is a deal of solid satisfaction in caring for a pen of handsome, well-bred fowls. We are all human enough to like to hear praise of our own possessions and no one can look at well bred, well mated fowls without admiring them. I should hate to keep a lot of chickens that I could not show to my friends with pride, but a good many persons seem to find mongrels satisfactory. Perhaps it is because they have never known the joy of raising beautiful birds.

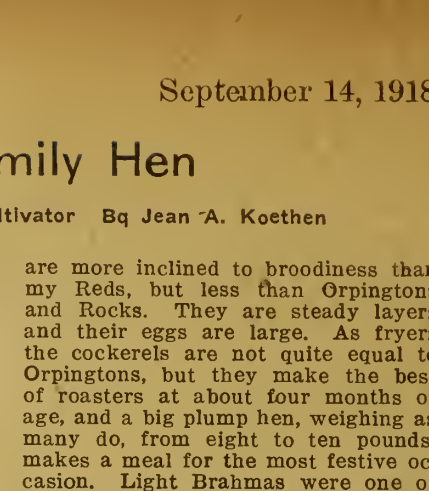
STORRS EGG LAYING CONTEST

Storrs, Connecticut, August 2, 1918. —Report for the forty-third week ending August 28.

During the forty-third week of the laying contest at Storrs the birds laid 3609 eggs, or a yield of 51.6 per cent, which is 47 more than last week and 281 ahead of the corresponding week last year. Of the 1000 birds competing, 229 failed to lay an egg during the week, or in other words, there were that many slackers.

Besides winning the week with 55 eggs the Oregons are now 13 eggs ahead of last years leading pen of the same date.

Now that the agricultural fairs and poultry shows are beginning the ques-



SHORTEN the moult and lengthen the laying. Globe A-1 Mash (dry buttermilk added) will do it. The live lactic acid bacilli in the dry buttermilk will keep your flock in glowing health: (bulletin 162 U. S. Agr. Exp. Sta., Berkeley).

For Hogs A-1 Hog Feed 10% dry buttermilk) will save from $6 to $12 on fattening each hog.

Fact Book for poultry and hog raisers sent free.

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Devils Dust has been tried and proven by long usage, thousands and thousands of packages have killed millions and millions of lice and mites.

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Try COULSON'S EGG FOOD FOR GREATER EGG PRODUCTION FULL PARTICULARS IN FREE BOOK "CHICKENS FROM SHELL TO MARKET"

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Why Hens Won't Lay

P. J. Kelly, the Minnesota Poultry Expert, 120 Kelly Bldg., Minneapolis, Minn., has published a book, "The Tale of a Lazy Hen." It tells why the hens won't lay and how to make them lay every day. Mr. Kelly will mail the book free to anyone who will write him.

tion of egg exhibits is worth while considering. Exhibits of all kinds are to encourage and develop a better, more standardized grade of animals or products. The standard egg exhibit is a plate of one dozen. Uniformity of shape, size and color; weight; texture of shell; and the condition of the egg in reference to its freshness, are the main points to be considered in selecting a dozen show eggs. Most of the points are external, but the judge has a right to, and should, break one egg in each dozen to determine its freshness. Though the standard market weight of a dozen eggs is 24 ounces, eggs weighing 28 ounces are preferred in the show room. A good scale of points to use in judging or selecting show eggs is as follows:

Uniformity of shape, 15; size, 15; color, 15; weight, 20; shell texture, 15; condition, freshness, 15; color of yolk, 5; total, 100.

The three best pens in each of the principal varieties are as follows:

Barred Plymouth Rocks

Jules F. Francais, 1675; Richard Allen, 1675; Tom J. Adamson, 1645.

White Wyandottes

Obed G. Knight, 1815; Brayman Farm, 1588; F. W. Harris, 1556.

Rhode Island Reds

Richard Allen, 1695; Pinecrest Orchards, 1534; Pequot Poultry Farm, 1430.

White Leghorns

Braeside Poultry Farm, 1755; Hollywood Farm, 1759; J. O. Le Fevre, 1739.

Miscellaneous

Ore Agricultural College (Oregons), 1935; H. P. Cloyes (Buff Wyandottes), 1545; Cook & Porter (Buff Wyandottes), 1510.

HOW TO INCREASE EGG PRODUCTION

Hens cannot produce eggs profitably on grain alone. The grain ration must be supplemented by protein concentrates. Recent investigations show that the source of protein also influences egg production. That is, protein concentrates of animal and vegetable origin differ in ability to stimulate laying. A series of tests have been conducted at the University of Missouri college of agriculture to determine the relative efficiency of animal proteins, represented in experiments with meat scrap and sour milk, and vegetable proteins, represented by oil meal, gluten and meal and cottonseed meal, in rations for egg production. Feeding tests have shown that:

Meat scrap and sour milk are the most economical sources of protein for laying hens.

It is poor economy not to furnish the laying hen a protein concentrate of animal origin.

Vegetable proteins alone cannot be fed economically.

Twenty-five per cent meat scrap is a sufficient amount of animal food in a dry mash.

There is no evidence that vegetable proteins, alone or in combinations with animal food, increase egg production.

One pound of eggs can be produced with every four pounds of feed if the proper ration is fed.

According to these tests, 100 pounds of sour milk is worth 5.4 pounds of meat scrap.

SUCCULENCE NEEDED

Plenty of succulence is needed in poultry food for strong egg production. Succulence is a food material found in the original vegetable juices of plants—such as cabbage, lettuces, sprouted oats, mangel beets, etc.

Succulence performs two definite purposes in the ration. It acts as a tonic, increasing the consumption of food by having a definite effect upon the palatability of the ration.

Given plenty of green food, the fowls not only better relish the food, but they digest more of it. The other purpose of succulence is that it provides plenty of water, one of the essential requirements in the ration.

Mangel beets are very succulent, containing approximately from 70 to 75 per cent of water.

Mangels should be cut in half lengthways. The halves can be nailed to the wall (cut side out), with a spike, about a foot above the floor, and the fowls will do the rest.

Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Chickens Swollen Feet

Is there any remedy for chickens that have sore feet? The trouble seems to be a swelling on the bottoms of feet.—Subscriber, Winters.

The swelling in the bottoms of your hens' feet is caused by jumping from too high a perch or onto too hard ground, or by walking on something hard or rough or sharp that has made them sore. You must get rid of the cause first. If the feet are merely swollen and sore, without pus, soaking in warm, soapy water and applying vaseline or any good salve should relieve them when the cause is removed. If there is pus, the swelling will have to be opened and cleaned with peroxide or witch hazel or warm water containing a drop or so of carbolic acid.—J. A. K.

Pruning Satsumas

I have five acres of Satsuma plums set out in the spring of 1915. They made a vigorous growth and I looked for some crop of fruit last year, but they all dropped off after blooming. I laid it to watering them while blooming. So this year I irrigated earlier, but fruit dropped just the same. They were pruned about the middle of March and I cut well back, all but four trees, but there is no fruit on them. Some time ago I had read in your paper of some men's experience in not pruning and I was inclined to let the whole orchard go, but I was afraid of them fruiting heavily and having to prop the limbs as I did in a young orchard adjoining last year. I like the looks or form of the untrimed trees the best, but now what I want to know is this. Should I cut off some of this surplus growth on these trees right now, the first of September or later? I met a man a short time ago who told me to prune now for fruit buds to form for next year. I sure want some fruit next year. They have three to five shoots four to six feet long sprouted out of each main limb fork.—Subscriber, Anaheim.

I would not prune these trees at all until after the fruit had set. After the fruit has set and is safe from dropping, the ends of the limbs may be cut off with part of the fruit to prevent their breaking and to render it unnecessary to use props. The fact that you have had no fruit for the last few years would indicate that the trees are in excellent condition as far as bud development is concerned. Wherever the branches are too thick and are inclined to droop or fall out of line of the outline of the top I would remove them entirely at this time, that is cut them off clear down to the main branch. If you are going to retain this orchard I would advise you to graft into each tree on one branch a Burbank plum. This would cross pollinate and assure you a good setting of fruit. This was our experience at the government station at Pomona.—J. W. M.

Argentine Ant

Last year I started a row of rhubarb and it did fine for awhile and then it began to dwindle, so I investigated and found ants, a small red-brown ant which eats the under side of the leaves and works on the stalk where it joins the root. I managed to save a few plants and they started off fine last spring, but the ants have started all over again. I have tried ant paste, ant powder, fresh ashes, and floods of water, but without success. Can anyone tell me some remedy for this trouble?—Subscriber, La Verne.

This is probably caused by the depredations of the Argentine ant. It is

Dr. L. D. LeGear's
Poultry Powder
Dr. L. D. LeGear, V.S. In Surgeon's Robe
FOOD WILL WIN THE WAR-PRODUCE IT.
Shortens the moult!
Long moulting weakens hens and loses eggs. Act promptly now and hasten Nature's course. Dr. LeGear's Poultry Powder positively will cut down the time required for moulting, strengthen hens' systems, and help you to get early layers, and
Make more Egg-Money this winter
Experiment Station tests and Dr. LeGear's years of actual practice, show that hens need a daily tonic during the moult. It gets them through the moult more quickly, counteracts the strain of moulting, and puts them in good condition to lay.
Dr. LeGear's Poultry Powder tones up a hen's system, improves digestion, produces a greater proportion of flesh and feathers from the feed, and stimulates the egg-producing organs. It is my own prescription, used successfully during twenty-six years of veterinary practice and poultry raising. Dr. LeGear's Poultry Powder is
Guaranteed to produce results
Buy a package from your dealer. If you do not believe that it has benefited your poultry, and made more profits for you, I authorize the dealer to refund your money.
Dr. LeGear's Stock Powders
produce perfect digestion, drive out worms, increase growth and production.
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cleanses, drys and heals sores and cuts quickly. Handy to use, in sifter top cans.
Dr. LeGear's Lice Killer
(powdered) rids your flock quickly of lice, protects chicks, etc.
Free sample—ask your dealer
Dr. LeGear's Remedies are sold by 40,000 of the best dealers—never by peddlers. Ask your dealer today for liberal free sample package of Dr. LeGear's Stock Powders or Dr. LeGear's Poultry Powder, and get a free copy of Dr. LeGear's Stock and Poultry Book. If your dealer hasn't the samples and books, ask him to write us for them. We will supply him promptly.
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Graduate of Ontario Veterinary College (Toronto, Can.) 1892. Nationally famous specialist in treatment of stock and poultry. 26 years' actual veterinary practice.

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18-36
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THE STINSON TRACTOR has a greater per cent of reserve power beyond its rating than any other tractor on the market. It transmits its drawbar power through spur gears only, and not through bevel gears. All gears on the Stinson are enclosed in a dust-proof housing and operate in a bath of oil.

There is positively no side draft on the Stinson, the pull being direct from the center of frame. The Stinson Tractor is equipped with the Stinson-Beaver motor with a 4¾-inch bore and 6-inch stroke.

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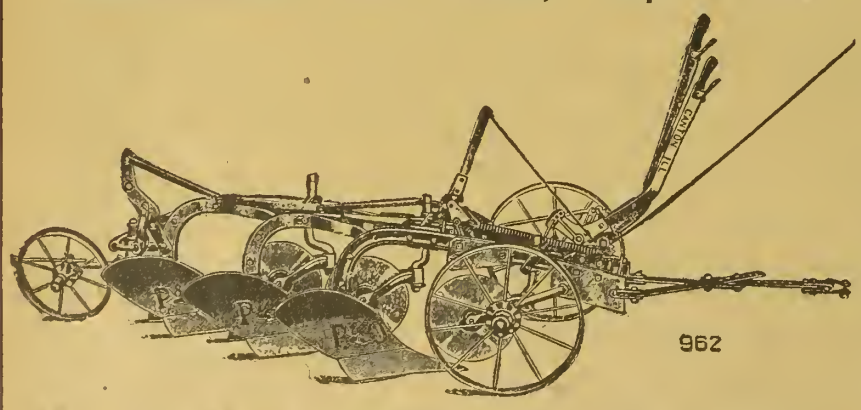

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one of our most serious pests, and would suggest first that inquirer write Agricultural Experiment Station, College of Agriculture, Berkeley, and ask for Bulletin 207, "Control of the Argentine Ant," or any other bulletins the station may have on that pest. In the meantime locate runways and poison with tartar emetic solution, ant paste, or any of the proprietary ant remedies, and also with buhach. Unfortunately the Argentine ant does not locate in large hills, so can not be killed by the wholesale by pouring gasoline into their nests as satisfactorily as other types of ants.

Figs

Here are two figs, one quite large, brown or reddish brown around blossom end and tingeing to green at stem, and a smaller one, a darker fig, purple or almost black, not so good, but would like to know its name.—Subscriber, Los Angeles.

These were referred to Geo. C. Roeding, Fresno, and upon examination he says that the large reddish or purplish brown fig is the Brown Turkey and that the small dark purple one was badly mildewed, so much so, in fact, that it was impossible to identify it. But he thinks it is the Mission. If not that variety, it is likely the Rose Blanche.

Cubic Feet in One Ton of Straw

Will you please give me the number of cubic feet in a ton of barley straw?—Subscriber, King City.

It is impossible to give any definite rule; just as it falls from the separator, probably 600 cubic feet. Hay freshly stacked in the ordinary way usually runs around 500 cubic feet; when settled, 400 to 450 cubic feet.

Citrons and Melons for Cows

Will you kindly give me advice as to feeding citrons and musk melons to cow? Are they worth anything or will it hurt the cow, especially the citrons?—Subscriber, Encinitas.

Squashes, pumpkins, and melons have much the same feeding value as mangels and large beets. Citrons have about half as much food value as pumpkins. Greater value is secured when the seeds are fed, this notwithstanding there is a tradition among some farmers that pumpkin and melon seeds increase kidney action and tend to dry up cows. Henry's "Feeds and Feeding" says "The seeds contain much nutrition and should not be wasted."

Nitrate of Soda

Can you advise me of the description of the mineral nitrate of soda, in its natural state, or where I can obtain the information? I think I have located a ledge of it.—Subscriber, Sanger.

This could best be answered by the chemists of the University of California, and we would suggest to inquirer the sending of specimens to that institution.

Seed in Tomatoes

How much seed does a ton of tomatoes contain, and how many packages of seed will one pound make?—Subscriber, Lodi.

This is a question to which it is impossible to give definite answer, for the number of seeds in tomatoes varies immensely with the variety. One dealer went so far as to advertise his tomatoes as almost seedless. The number of packages to the pound is determined by the variety and quality of the seed. That can be determined easily by taking a number of packages and weighing.

Grape Syrup

Are there any large manufacturers of grape syrup? If so what are their names?—Subscriber, Los Angeles.

We don't think the manufacture of syrup from grapes is as yet conducted in a large way. In any case we are unable to give the names of large manufacturers.

Grape Wine

I would like to make some grape wine for family use, say one-half of one barrel. Will you please give me directions for making it?—Subscriber, Wasco.

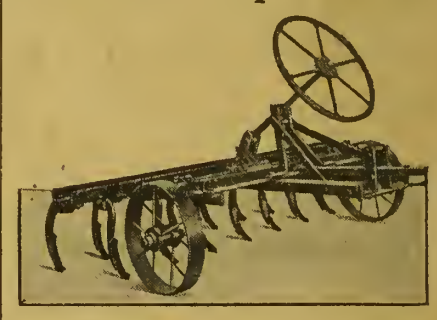
The agricultural experiment station and state viticultural commission have issued bulletins on various wine making problems, but we think as a rule these are of a technical nature. We think by writing State Viticultural Commission, Sacramento, or Prof. F. T. Bioletti, University of California, Berkeley, it is possible a simple homemaking method may be secured.

Kissing Bug

Am sending specimen of a very poisonous bug. Can you tell me the name of it? Its bites cause a great deal of painful swelling and itching. I have heard that three or four of these bugs have enough poison to kill a person. I believe they live in the sage brush and are carried into the house on the clothing and then seem to hide in the beds.—Subscriber, Lancaster.

This is one of the "Kissing Bug" or "Sassing Bug" family. Its bite or sting is usually not more severe or painful than the sting of a bee, but it is certainly not companionable. Usually this insect lives upon other insects and out of doors and on trees, though sometimes it infests houses for the sake of preying upon bedbugs, to which it is distantly related. If the infestation is serious they may be cleaned up by thorough fumigation.

Brenneis'
Special Heavy
Tractor Implements



The Brenneis Orchard Tractor Cultivator made in two grades for light or heavy tractors and five sizes.

Your tractor will give best results if you use farm implements made especially for California soils.

Since 1898 we have been manufacturing a line of heavy duty bean, beet and orchard implements—tools that are built solid and strong to stand up under western conditions. A large and complete stock of extras for all of our implements is always carried on hand so orders can be promptly filled. We make special farm tools to order. Send for our free catalogue or call on our nearest dealer.

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COWS, HOGS AND A BANK BOOK.
Your dream of life, of ease, comfort and independence await you at
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On Port Susan Bay, Snohomish County; 6000 acres of the best land that lies out doors; a 2 hours' ride from Seattle places your feet on the richest, most productive soil in the whole state of Washington; rail and water transportation; near paved roads, schools, churches, cannery and condensary; 3½ miles of waterfront and finest beach on Puget Sound; 20 miles of beautiful lake shore, surrounding 8 picturesque lakes; these lakes teem with trout. Get in on the first choice for $35 per acre and up; 10 yearly payments, 6 per cent interest.
This is but the beginning of the story of Birmingham. Send to the owners for illustrated literature. BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

400 acre stock and grain ranch 3 miles Pleasant Valley R. R. station, Mariposa County, California; 100 acres cleared and tillable, nearly all of the 400 acres could be farmed if cleared of the large oak and other trees, wood sells for $12 per cord at station, 3 and 6 room house, large barn, and out buildings, black smith shop and tools, ranch fenced and cross fenced, part hog tight, hogs never have cholera here, family orchard and garden irrigated from springs. Average rainfall 29.88 inches; grapes, olives, almonds, etc., grow without irrigation, feed in pastures and free outside range adjoining knee high, elevation 1500, no alkali or hard pan, ½ mile school and church, $30 per acre including 300 goats, 3 horses, 3 head cattle, turkeys and chickens and all farm implements. $3000 cash, balance long time 7 per cent. Fred B. Palmer, owner. Coulterville, California.

For Sale — Forty acre ranch seven miles from Modesto, Stanislaus County, on main highway, paved to within one-fourth mile. Thirty-five and half acres fine alfalfa, one and half to be planted this season, two acres mixed bearing orchard. One acre buildings and corrals. Dairy barn for forty cows, separator room, etc. All complying with new dairy laws. House, barn for five horses, calf shed etc. On main irrigation lateral. Very near modern school. Fine drinking water. One-third cash, balance long term seven per cent mortgage. Deal with owner. No agents. Will be glad to have friends show intending buyers the ranch. Write Carl G. Meiners, Meiners Rancho, Ojai, Ventura County, California.

Ranches — Large and small, improved and unimproved in all parts of California for sale on the easiest kind of terms. Might consider other property, either real or personal as part payment. Pacific Coast Land Co., 829 Hearst Bldg., San Francisco.

20 acres deep silt land, joining good town on the South; 10 a. alfalfa, 10 a. grain; 300 feet to railroad station. Plenty of water for irrigating Soft water piped on place. Price right. Chas. McNeely, Alpaugh, California.

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For Sale — Flemish Giants $1.50 each. Good stock. Low Prices. R. A. Fuchs, Rescue, El Dorado Co., California.

For Sale — Rabbits, New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.

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The Yellow Front. Established 1892.
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Oregon, California Government Lands — Booklet free. Tells "How, Why, Where." Write Joseph Clark, Sacramento

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Guaranteed to do as much work as new.
WINDMILLS—8 ft., $32.50; 10 ft. $42.50; 12 ft., $65; 16 ft., $125; 8 ft. aermotor and steel tower, $59.60.
PUMPS—Bulldozer, 18-in. stroke, $95; double-acting Ames, $145; old-style single Jack, 24-in., $55; 2½-in. rotary, $38; two-stage vertical B. J., $150; 7-in. vert. Krough, $175; fine 6-in. horizontal, $125.
RANCH TOOLS—Single 2, 3, 4 gang disc and moldboards; plows, fine shape; 30 spring tooth harrows, some new; 4 Killefer choppers; 4-horsepower gear, $40; brand-new John Deere chisel cultivator, cost $120 new, our price $85; single-disc cutaway harrow, $29; double 32-disc harrow, $78, cost $200. Not everything, but everything we advertise.
TANKS, TANKS—We do not advertise "by far the biggest lot of junk" in the city, but real tanks. Used redwoods, new and used iron tanks, for less; 4500-gal. heavy galv. with top, $95; 6000-gal. galv., $120; 25,000-gal. redwood, $125. DEMMITT CO., office 120 N. Main, upstairs. Yards, 816 Yale, Los Angeles. Also buy serviceable material.

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All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.
WEISSBAUM PIPE WORKS,
169 Eleventh St., San Francisco.

For Sale, Holt Caterpillar Model 18. Has been entirely rebuilt by the Holt Mfg. Co. For information or demonstration phone owner, G. F. Blackwood, Glendora, or Holt Mfg. Co., Los Angeles. Might take good team as part payment but nothing else.

For Sale — Samson Sieve Grip Tractor large size used only few months. No abuse, good mechanical condition. Also practically new four disc power lift P. & O. plow. Address Box 56, Tehachapi, California.

Gasoline Engines, the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

For Sale—1914 12-25, I. H. C. Mogul tractor and 4-14, power lift, P. & O. plow. All in good condition, $1500. Address Box 174A, Rt. B, Visalia, California.

MISCELLANEOUS

Farm Letterheads at Very Small Cost—Like every farmer needs. Printed with your specially designed name, a view of your farm, live stock, poultry or agricultural products. Why be without attractive letterheads like up-to-date farmers are using when they can be had so cheaply? Write for samples. Frank E. Brown, 1377 Palm Terrace, Pasadena, California.

Fords—Get 10 miles more per gallon, with our wonderful fuel saver, and no carbon. Anyone can attach in 15 minutes. 10 days free trial. You take no chances. Agents wanted in all rural districts. You can make big money easy. Order one today. Sample $5.00. Williams Company, 829 Hearst Building, San Francisco.

Incubators For Sale—Ten Model 83 Petaluma Incubators. 504 egg capacity. Make offer on all or part. C. Paulson, Box 134, R. 3, Sebastopol, California.

To Reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

WANTED

Wanted — Ranch Foreman familliar with beet, grain and hay ralsing. Must also be good with stock and handling men. Address R. E. Boyle, Montana Land Company, Hynes, California.

Herdsman Wanted—Single man preferred. Could use a married man with small family. M., care Cultivator.

Wanted — Seven to twelve good dairy cows. Chas. A. Miller, R. F. D. No. 1, Ontario, California.

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Early Amber Sorghum makes the best sllage and produces the greatest tonnage per acre. Recleaned seed 9c per pound f. o. b. Stockton. Fancy recleaned Sudan seed at 18c per pound f. o. b. Stockton, in lots to suit. Aurora Seed Mill, 48 N. Aurora St., Stockton, California.

Seed Grain — We can make attractive prices on seed wheat and Winter or Gray oats and other field seeds. Have a full line of nursery stock. Supply of seed grain will be limited. Write now, 28 years in business. Carlton Nurseries, Carlton, Oregon.

50,000 Yellow Calla Elliottiana Bulbs. William Richard, 438 River St., Santa Cruz, California.

Peruvian and Common Alfalfa Seed—Specialty. Write for prices and sample. Box 501. Fowler, California.

LUMBER

Lumber-Sash-Doors-Plumbing - Supplies—Building materials of all kinds. New and second hand "A"R.W. shingles 60c per bundle. Send list for estimates. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street. San Francisco.

GOATS

Toggenburg Milch Goats — Rae P. Williams, Federal Realty Building, Oakland, California.

ENGINES

Several New and Slightly Used Engines. ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

HOGS

BERKSHIRES GUERNSEYS
GRAPE WILD FARMS
A few fall boars left by Royal Superbus —also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
A. B. HUMPHREY,
Escalon, San Joaquin County, California.

Poland-Chinas — Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair 1916 and sire of the 1917 State Fair grand champion or I. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale I. Marsh, Modesto, California.

Superba, World's Grand Champion Poland-China boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, California.

We Pay Cash for Hogs of All Sizes, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170. 3030 E. Vernon Ave., South 2712-J. Los Angeles.

Rancho Rubio Durocs—Thirty of the finest fall gilts we ever raised. Will begin breeding May 10. Write for prices and pedigrees. Some splendid weaned boar pigs for $25.00. Elmer Lamb, Ceres, California.

"Billiken" Chesters; Service Boars—If you are needing a boar this fall now is the time to buy. Few bred sows due to farrow in October. Open fall gilts; few weaned boar pigs. C. B. Cunningham, Mills, California.

Mule Foot Hogs, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California, "The Blue Gums."

Registered Big Bob Poland-China Brood Sows. July and October, 1917 farrow. Bred to pig in October to a son of Marsh I. B. A. Wonder. $40 to $50 each, crated, f. o. b. N. M. Lester, Gridley, California.

For Sale — Registered Berkshire pigs sired by Lord Premier's Successor 11th. J. Pringle, at Oak Crest, Cahuenga Pass, R. D. 10, Box 864, Los Angeles. Holly. 14R3.

Castleview Berkshires are the typey, modern, quick-growing kind, choicest blood lines. Prices reasonable. Castleview Ranch, Berkshires exclusively, Santa Rosa.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

Poland-Chinas—A limited number sows, bred to our great boar Model Wonder, big type, straight and right. Dimmick Brothers, Lemoore, California.

Fine big smoothe Poland-China boars and gilts $20.00. Registered and crated f. o. b. Live Oak, California. A. J. Stohlman.

Duroc-Jerseys — We breed the champions. Peters, Lamson & Walker, Devore, San Bernardino County, California.

Greenwood Farm Durocs — "Size with Quality." H. C. Witherow, Palo Cedro, California.

HEWITT'S BIG TYPE POLAND-CHINA gilts and boar pigs. Hewitt & Hewitt, Dixon, California.

Registered Durocs of the big type—Cholera immune. Derryfield Farm. Odd Fellows Building, Sacramento, California.

Carruthers' Farm Berkshire Hogs—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, California.

For Sale—3 Duroc boars subject to registration. Amos S. King, Westmoreland, Brawley P. O.

Poland-Chinas — A few good breeding boars. S. F. Williams, Orland, California.

REGISTERED BERKSHIRES. FAIR OAKS RANCH, WILLITS, CALIF.

BIG TYPE POLANDS
W. H. BROWNING, WOODLAND, CAL.

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Avocado Budwood — Tree performance record. 50 Fuerte trees planted in 1914 averaged the second year from planting $10 per tree; third year (which included June hot wave) $6.00 per tree; fourth year now looks exceptionally good. J. T. Whedon, Yorba Linda, California.

For Sale — Very fine Valencia trees, two year high buds; ¾ inch to 1⅛ SOUR ROOT. Also yearlings, SWEET ROOT, ½-in. to ¾-in. all very thrifty, finest soil for balling. S. R. Coate, 564 So. Los Angeles St., Anaheim, California. Pacific 403 J.

For Sale — Seed Bed Stock, Orange and Lemon Trees, and Avocado Trees of all standard varieties. Walker-Hubbard Nursery Co., San Fernando, California.

Citrus Trees — All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park, California.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

For Sale — Choice, young, thrifty Citrus Trees. W. W. Burns, 631 Security Bldg., Los Angeles.

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"TESTED" and "GUARANTEED"
Screw pipe, casing, valves and fittings. Riveted slip joint pipe; all sizes. New and used. "Pacific" pipe for all purposes.
PACIFIC PIPE CO.,
Main and Howard Sts., Est. 1906. San Francisco.

CATTLE

SHORTHORN CATTLE, SHROPSHIRE SHEEP. Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., California. W. P. Dwyer and W. S. Guilford, Owners.

Pedigreed Bull Calves. Registered $50.00, unregistered $25.00. Service bulls $75 and up. Good individuals from producers. Cows with yearly records at a profit, tuberculin tested. Write or come and select. Horses. N. H. Locke Co., Lockeford, California.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, California.

Registered Shorthorns (beef) calves and yearlings for sale. Both sexes, reds and roans. Choice goods breeding. Fair Oaks Ranch, Willits, California.

Ayrshires (registered) — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

Elkhorn Farm Ayrshires—For sale young bulls of exceptional breeding and individuality. J. Henry Meyer, R. D. 2, Box 82, Watsonville, California.

Sunshine Farm Jerseys — Young bull, ready for light service, for sale. E. E. Grcenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Notice to Butcher—5 head of beef cattle for sale. Charles Brochu, Placerville. El Dorado Co., California. Box 476.

REGISTERED JERSEYS FOR SALE. J. R. CARHART, FULLERTON, CAL.

POULTRY

Fall Chicks For Sale—400,000 S. C. White Leghorn chicks from free range Hoganized stock only, for delivery from July to December, at very reasonable prices. Fall chicks are most profitable—broilers in ten weeks, pullets lay at five months. We guarantee safe delivery of all chicks to destination. Shipped safely anywhere West of the Rockies. No money in advance, pay on delivery. Special prices on 500 and 1000 lots. Finest hatchery in the world. Established over twenty years. Further information write Must Hatch Incubator Company, 424 Seventh Street, Petaluma, California.

Feed High; Eggs, Meat Higher! Our 200-290 egg Leghorns, Anconas, Reds, Rocks, Wyandottes, Minorcas, ducks are more profitable now, clearing $5.00. Some greatest government trapnested hens, 280-283. Hundreds breeders, laying, younger pullets; thousands chicks weekly; reasonable, fine males $1.00 up, worth treble. James Beeson, Pasadena, California.

White Leghorn Baby Chicks—Put in a lot of baby chicks this fall. Help out the food situation. Make some money, buy some Liberty Bonds, give the hatchery man a chance to buy some bonds also. We guarantee our chicks to be first class. Lyon Hatchery, Gardena, one-quarter mile east of harbor boulevard on Palm Avenue.

"Eastman's Bred-to-lay" Hoganized and trapnested Barred Plymouth Rocks, Septemher chicks, eggs, cockerels. Fairmead Poultry Farm, Fairmead, California.

White Leghorn Baby Chix from heavy laying (Hoganized) stock. $14.00 per 100. We guarantee safe arrival. The Pioneer Hatchery, 409 Sixth St., Petaluma, California.

Fall Chicks — Book order now for your future meat and egg supply. Write for special circular on fall chicks. Stubbe Poultry Ranch and Hatchery, Palo Alto, California.

Chix—Barred Rocks, R. I. Reds, Orpingtons, Anconas, Minorcas, Buff, White and Brown Leghorns. Breeding Cockerels. Enoch Crews, Seabright, California.

Black Orpingtons Lay, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, Cal.

FOR LEASE

To Lease—On shares. Large dairy and grain farm. Box 175, Tipton, Tulare Co., California.

TO FIND NUMBER OF BOTTOMS

To figure the number of bottoms which can be pulled, divide the draw bar pull by the cross section of one furrow, multiply by the draft per square inch of cross section of the furrow.

Example: An 8-16 horse power tractor to be used on the basis explained must have a pull of at least 8x180, or 1440 pounds to make good its rating. Plowing is to be done in clover sod, six inches deep, and the pressure per square inch on the plow is seven pounds, according to the foregoing figures. Thus, the cross section and depth of plowing (14x6) multiplied by seven (draft per square inch), equals 588 pounds. Fourteen hundred forty pounds, the draw bar pull, divided by 588 equals 2.4. Thus we can safely estimate the tractor's ability to pull two 14-inch bottoms.

EVERY IDLE ACRE HELPS THE ENEMY

Let us cultivate every available acre of land. Do not let labor shortage hinder. Let machinery do the work. The idle acres of America can grow more food each year than all the enemy's submarines can destroy.

Household Department

COME

Written for California Cultivator
By Ida May Blake

We'll live awhile in the mountains,
Live near to nature's heart.
We'll drink at her icy fountains,
Far from the busy mart.

We'll learn to love her better,
Dear heart of mother earth.
When free from cares that fetter
We'll learn her priceless worth.

Oh ye who seek for pleasure,
In hot and crowded hall,
Oh come and share the treasure,
That God provides for all!

There is no play to equal
The moving picture shown,
With story, plot and sequel
Right here at nature's throne.

And sweetest music lingers
All through the golden hours,
That is not made by fingers,
But birds and bees and flowers.

Then evening gathers slowly,
The woods are hushed and still.
It is a temple holy,
O worship, ye who will.

CUPID, 1ST; SAFETY, 2ND; TIME, .00¼

Continued from last week.

The speedometer registered 23 during the homeward drive. Ferdie returned to the garage in gloom. He had violated his unspoken pledge. At the garage he encountered Jack.

"Y'ought to have seen him," Jack was relating to the garage man who wes peering under the hood. "Chased me 22 miles and I had to touch 65 on a country road to shake him off. I'm driving north for the next two weeks until he forgets."

"Some boat this, Jack," said the admiring one, "some sub-chaser; some scooter; some ——"

His supply of expressions having been exhausted, he hesitated and Ferdie made his exit.

The following afternoon Ferdie asked Betty: "Do you really enjoy speedy driving?"

"Why," she hesitated, "why—yes, since you ask, I do, at times, although of course I perfectly adore riding with you. One sees so much of the country and enjoys the scenery * *"

"Very well," said Ferdie, with an accent of finality.

On the following day one of the downtown automobile agents received a call. Ferdie, being in the brokerage way and accounted worth while, in money and in other ways, received deferential and preferential treatment.

"Of course, Mr. Maypole," he said disparagingly, after listening for some time, "of course we can do it, but it seems ridiculous—"

"Very well," said Ferdie, with additional finality, "do it, and do it as soon as possible. I will attend to the ridicule."

Two weeks later it was rumored in the Clifton "set" that Ferdie was driving a new car. There was some curiosity concerning it. The wagering at the Country Club was six to five that he had found his touring car too fast and had purchased one with an automatic speed regulator. Several reported having seen Ferdie's new car at a distance. The garage man, being interrogated by Jack, declared the old car had been standing idle and that no new one had been placed under his tender (more or less) care. Betty La Clain was frankly disturbed because Ferdie had not honored her with an invitation to take the first ride. A week passed, then Jack arrived at the Country Club in glee.

"I've seen it," he declared. "It looks like a fliver hitched behind a truck engine. I was so busy looking to see whether it has a cowcatcher or a fender that I didn't notice whether it has tires or cogged wheels like a road roller."

Clifton spreads over the crest of a very beautiful hill, one of a semi-circle of demi-mountains that meet the river at either flank and, with the river, form a circle. Within this circle lies Cincinnati, and over the river rise the mountainous hills of Kentucky. Deep valleys lie between the hills and beautiful driveways wind through them, some leading down to the city by steep, winding inclines. Far over to the east, where the range of hills breaks suddenly with an almost sheer drop to the river, is Eden Park, and along one side of this park Gilbert Avenue is carved from stone and leads downward to the city. From this approach to the hill fastnesses where the wealthier city folk live one may reach Walnut Hills and Avondale, and, passing through or around them, may descend into wonderful valleys.

It was in one of these valleys, far out beyond the Zoological Gardens, that Fate overtook Jack and Ferdie and Betty. Jack had been making the skylines look like blurry movies, and had been compelled to stop because of an overheated engine which refused to resume operations. He had toiled and tinkered, and not a purr could he arouse in the engine. The day was hot. Betty was hot and cross —"Red Cross," Jack averred in a futile effort to coax a smile from her. Already she was hours late to the luncheon Jack had promised she would not miss. Jack had abandoned his efforts to resuscitate the engine and was sitting on the grass enveloped in gloom and grease, when from the northward came the sound of an automobile proceeding sedately. Presently it emerged into view. The nearer it came, the more the gloom lifted from Jack's face.

"Look who's here," he chortled. "Little Ferdie, the Speed Demon, in his 1492 model ash-cart."

"Oh, Mr. Maypole," said Betty pleadingly, "please, will you take us into town? Jack—Mr. McClurg's car is broken and I have a very important engagement—"

"Certainly," said Ferdie freezingly. "Delighted. Climb in."

"Better turn on the lights," suggested Jack. "They're strict about it in the city and it's only seven hours until dark."

"I assume you are in a hurry?" queried Ferdie softly.

"Not particularly," retorted Jack. "I have an engagement after dinner, but it doesn't matter. We may catch a street car at the limits if we get too late."

"I'll strive to take you in in time," said Ferdie, his lips setting in a straight line.

"Why don't you carry a sleeping trailer?" ask Jack insinuatingly.

"All ready?" asked Ferdie, as Betty and Jack settled into their seats.

"A little motion," Jack ordered.

Things commenced to happen. The car leaped forward fifteen feet, seemed to hit the ground, took another leap, and shot toward the crest of the hill at 60 miles.

"Look out!" yelled Jack. "What's the matter?"

Betty, her head snapped back by the first lunge of the car, let out a little screech and closed her eyes.

For the next ten minutes the landscape simply flowed past. The air was reeking with strange noises and rattles. They dropped down into the valley going 70 miles an hour, struck the street car tracks and flashed up past the Zoological Gardens with speed scarcely diminishing under the strain of the incline. Jack was striving to clamber from the rear seat into the front, thinking that either the car had run away or that Ferdie had gone crazy. A wild lurch, with the car tipping onto two wheels, hurled him back.

"He's crazy," he shouted to Betty, who was clinging to the hand rail and half sobbing.

"Some speed, some boat!" yelled Ferdie. "Hold tight now, I'm going to open her up."

They were doing 70 through traffic in Walnut Hills.

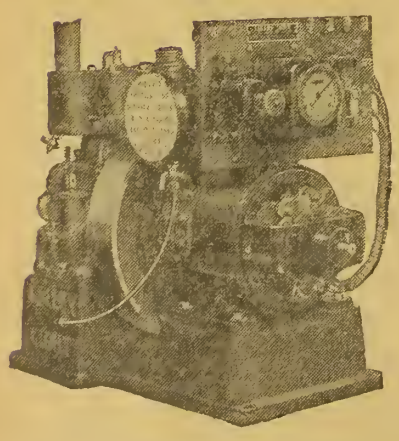
"Slow down," yelled Jack. "Shut off the gas, she'll stop."

He still was laboring under the impression that the car was beyond control.

"Keep your nerve," screeched Ferdie, grinning as he flashed a quick glance. "She's just warming up."

They leaped into Eden Park, making a noise like a cyclone hitting a tin roof factory. Nurses, baby carriages and pedestrians scattered half a mile ahead of them. Automobiles took to the grass. Past the Art Museum they went down the steep grade to the edge of the reservoir. At the water's edge Ferdie swerved the car so that it tilted as if to roll into the lake, righted, and shot under the high bridge and down grade out of the park and onto Gilbert Avenue. Another sickening lurch, a half skid, and the car righted itself at the edge of the

Satisfaction Assured in Advance



Generating plant is 27 inches long, 14 inches wide, 21 inches high. Storage battery is included in complete outfit.

It is a fact that Lalley-Light usually finds preference among those thoughtful farmers who are regarded as neighborhood leaders.

It is not hard to understand why.

The man who seriously looks into the electric light situation discovers that Lalley-Light has been in successful farm use for more than seven years.

He hears it well spoken of everywhere it is known.

He learns that faithful, year-to-year service and economy are the experience of Lalley-Light users.

He receives the impression that he would be entirely safe in investing in Lalley-Light.

He accepts these things as actual advance assurance of his own future satisfaction.

In reality, they are exactly that. For Lalley-Light satisfaction probably approaches 100 per cent as closely as it can be approached.

Never was the need for Lalley-Light so imperative as now.

Farm labor is scarce. Lalley-Light saves labor by supplying the power to do much necessary work.

Farm products and farm buildings are more valuable. Lalley-Light safeguards them by removing the fire risk entirely.

Lalley-Light brings to the farm a score of conveniences and comforts that only electricity from a wholly dependable plant can bring.

In addition, it has its own exclusive advantages which the nearest Lalley-Light dealer will gladly demonstrate and explain.

Write us for his name, and for complete details.

Look for the Lalley-Light demonstrating exhibit at your state or county fair this fall.

Lalley Electro-Lighting Corporation

774 Bellevue Ave. Detroit, Mich.

Distributors:

Weinstock Nichols Co., 1211 S. Olive St., Los Angeles, Cal.

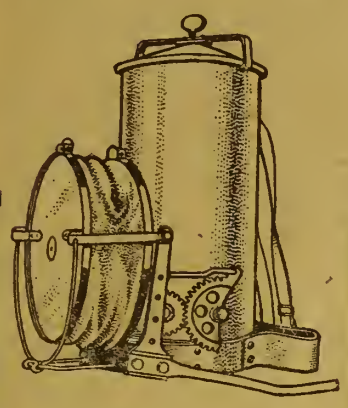
Weinstock Nichols Co., Care Brown Lalley Ltg. Co., 1922 Tuolumne St., Fresno, Cal.

Weinstock Nichols Co., 538 Golden Gate Ave., San Francisco, Cal.

LALLEY-LIGHT

THE ELECTRIC LIGHT AND POWER FOR EVERY FARM

American Beauty Dust Sprayers



Kill the Spider
Tomato Worm
Mildew
Squirrels and Gophers

Send for our book

Standard size $18.00
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The Liquid Flame

Gopher and Squirrel Exterminator

At your dealers or send to us

The California Sprayer Co.
6001-6029 Pasadena Avenue
Los Angeles

W. J. Bush
Citrus Products Co., Inc.
National City, Cal.

Manufacturers of

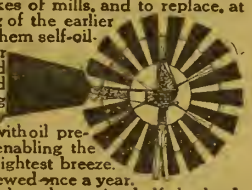
ESSENTIAL OILS AND CHEMICALS

Citrus By-Products a Specialty

We are always in the Market for Lemon Culls

THE SELF-OILING WINDMILL

has become so popular in its first three years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load



We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.

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For Sale by
SHAW-PALMER-BAKEWELL CO.,
421 East Third St., Los Angeles.

WITTE Kero-Oil Engines

Twice the Power at Half the Cost
Sizes 2 to 30H-P.--Select Your Own Terms -- Direct-from-Factory prices. Write your own order--Save $15 to $200. Prompt Shipment. Big new catalog, "How to Judge Engines" FREE-- by return mail, Postpaid.

Write Today, $100

WITTE ENGINE WORKS
$100 Oakland Ave., Kansas City, Mo.
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Money Back if not satisfied on my New 90 Day Engine Offer

Better service is assured by the advertiser if when writing you mention the California Cultivator.

declivity and turned down the steep, winding roadway toward the city.

Betty's screams had ceased. She was huddled on the floor, eyes shut, hair flying. Jack, after three efforts to clamber over into the front seat with a wild idea of overpowering Ferdie or shutting off the gas, crumpled down beside her and waited for the shock.

The car lurched around the turn at the foot of Gilbert and turned across the maze of tracks in Deer Run Valley. A switch engine got out of the way just in time to escape demolition.

"Whoopee! Some boat!" yelled Ferdie.

The remainder of the ride was a nightmare to the two passengers. No one recalls accurately all the details. Policeman Schermer says the big car, sounding like a boiler factory running away, emerged into Fountain Square three times, threw a mail wagon into Mabley's windows, went over the fenders of two street cars, and vanished going down hill on Vine street at 60 miles an hour after tearing down a lamp post. He says that, on the second time around the square, he threw his club at the driver and that the club hit the front of the car the next time it came around.

The evidence of other witnesses is to the effect that, going down Vine street hill toward the river, the car slowed down to 50 miles an hour, took the front end off a truck, caused three horses to try to drag wagons into stores, turned onto the Suspension Bridge after missing a street car half an inch, made three complete revolutions when it skidded while making the turn onto the bridge, and caromed off the railing before righting itself. The bridge police report that forty persons were climbing over the railings ready to jump into the river, but that the car had passed before they could make the leap.

Reports from Covington are hazy. Beyond a popcorn wagon reduced to kindling wood, a hand cart that lodged in the lower branches of a tree and a few minor traces the trail consisted only of noise and burned gas.

Near the Latonia race track Ferdie slowed down to get gas and came to a stop within half a mile after passing the filling station.

"Let us out," clamored Jack as Ferdie whirled on the sidewalk, making the turn at 20 miles an hour. "Stop her."

"I thought you liked speed," said Ferdie. "Wait until I get more gas. There's a good road on beyond."

"You're crazy," yelled Jack. "What do you want to do—kill us?"

"I always think," said Ferdie, addressing the open air as he stopped the car at the filling station, "that persons who talk of Safety First lack the nerve to drive faster than 20 miles an hour."

"Nerve?" said Jack. "Nerve doesn't consist of trying to kill people. Miss La Clain, get out. I'll hire a car to take us back. I won't ride with a maniac."

"Miss La Clain just dotes on fast driving, don't you, Betty?" asked Ferdie.

"She shall not ride back with you," proclaimed Jack.

"Perhaps," said Ferdie softly, "Miss La Clain should be consulted before giving orders."

"Are we home?" asked Betty suddenly opening her eyes. "Oh, my hair must be a fright. I've had a perfectly gorgeous—why we're over in Kentucky."

"I thought you would enjoy a little speed—a little motion, after so much slow-poke riding," said Ferdie.

"It was perfectly magnificent," said Betty.

"You shall not ride back with him," stormed Jack. "He couldn't get me into that thing for a million."

"I shall ride back with Mr. Maypole," said Betty, being unaccustomed to receiving orders.

"Thanks," said Ferdie triumphantly. "I'll drive carefully and try to choke her down to 40."

The return trip was over the other bridge. What transpired during that more sedate journey is not accurately stated, but, as the car, minus only one headlight and a few fenders, rattled up into Clifton, Betty said:

"Oh Ferdie, it was just perfectly gorgeous of you to do it to show me you had the courage, but—afterward, dear, let's buy an electric." — Milestones.

Save Iron and Steel
Help win the war

Make the old range "do" another year.

The iron you save is war material. The space you save in the freight car is needed for war shipments.

If your old range is a Majestic, you probably don't need a new one; a few repairs will make it O. K.

If your range is not a Majestic, and you can't make it do any longer, buy a Majestic, because it *saves fuel, saves food* and *saves repairs.*

Saves fuel because the riveted oven is airtight. No fuel is wasted through escaping heat. Saves food because it bakes perfectly and evenly. Saves repairs because it is made of unbreakable malleable iron and *rust-resisting, charcoal iron.*

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Visit Our Store When You Come to Los Angeles to Attend the Tractor Show

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Alfalfa Seed

Common Variety 19c. per lb. Smooth Peruvian 25c. per lb.
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Delay Buying Until You Have Compared My Samples With Seed Others Offer

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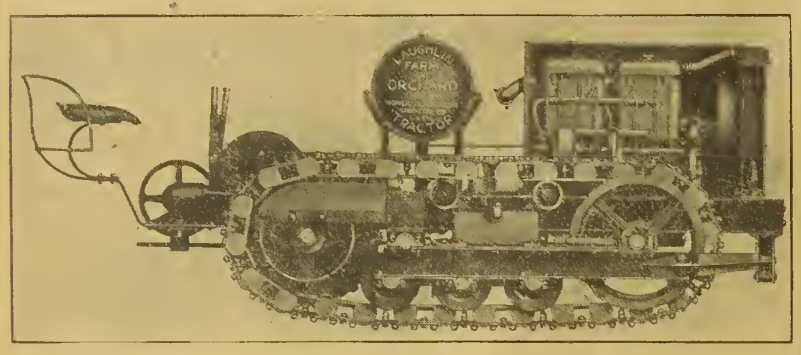
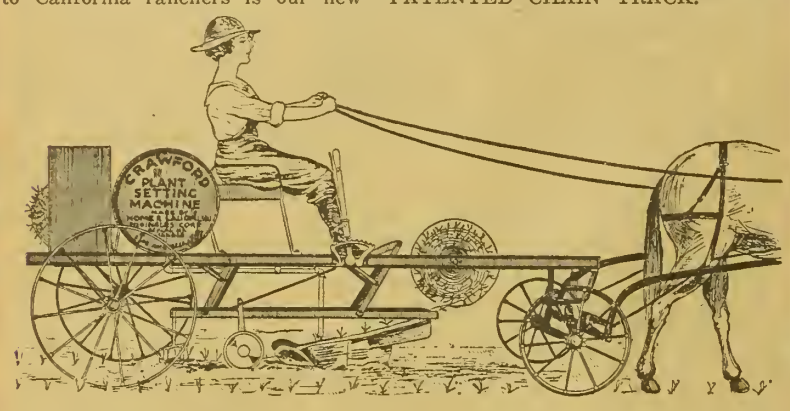
Yuma, Arizona

Laughlin's "Little Husky" 8-16 Tractor



The Homer Laughlin Engineers Corporation of 2652 Long Beach Ave., Los Angeles, will demonstrate the "Little Husky" tractor at the Tractor Demonstration, Sept. 17 to 22. This is not an assembled machine. It is made complete in Los Angeles. Dealers and farmers will be offered the best factory service. A feature of our tractor that will commend itself especially to California ranchers is our new "PATENTED CHAIN TRACK."



We will also exhibit the Crawford Transplanting machine, an implement that will do the work of 60 men per day in transplanting cabbage plants, onions, etc.

Homer Laughlin Engineering Corporation

2652 Long Beach Ave. Los Angeles

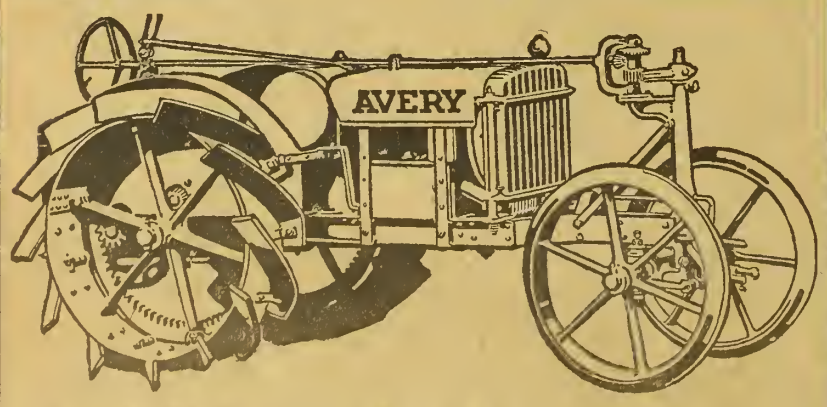
New Avery Tractor

$650.00 Delivered

F. H. Poss Co.

Southern California Distributors

Open for Agencies **See us at L.A. Demonstration**



$650.00 delivered

Extra parts are always available without delay for standard advertised machinery. This class always found in the California Cultivator.

Los Angeles Market

Los Angeles, September 11, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.
Cal. Extra Creamery 51
Dairy Exchange price past week on extras.

Sept.	4	5	6	7	9	10
'18 ...	50	50	50	51	51	51

Rcts. wk. ending Sept. 10, 254,800 lbs.

CHEESE

Brokers' prices:
California fresh, lb. 28

EGGS

Exchange quotations. Price to retailers 2 to 3 cents higher.
Fresh extras 59
Case Count 53
Pullets 50
Dairy Exchange prices past week on fresh extras.

Sept.	4	5	6	7	9	10
'18 ...	59	59	59	59	59	59

Rcts. wk. ending Sept. 10, 1563 cases.

POULTRY

We quote to producers.
Broilers .....33@35
Fryers 29
Hens, small, 22@24; heavy 27
Colored 29
Ducks, lb., 20; ducklings .....22@25
Roasters 29
Roosters, old 18
Turkeys .....28@33
Geese 15
Belgian Hares 16
Squabs .....30@35

LIVESTOCK

We quote cwt. f. o. b. L. A.
Corrected Wednesday morning, September 11, by the Cudahy Company.
Cattle—
Beef steers, av. 1000-1100 lbs. 12.00
Heifers, good 9.00
Cows, good 8.50
Veal Calves 10.00
Canners .....5.00@6.00
Hogs—
Av. 150 lbs. 17.50
Av. 175-225 lbs. 18.50
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers 11.50
Ewes 10.50
Lambs 15.50
Yearlings .....11.50@12.00

POTATOES

Wholesale selling prides:
Burbanks .....2.75@3.15
Sweet, lug .....1.00@1.10
White Rose, lug 1.00

ONIONS

Wholesale selling price, cwt.
Australian Brown, cwt. .....2.35@2.40
Silverskin .....2.40@2.50

VEGETABLES

Wholesale prices:
Beans—Wax, lb. .....5@6
String .....6@7
Limas, lb. .....5@5½
Beets, sk. 2.00
Cabbage, cr. .....3.50@3.75
Carrots, doz. 35
Celery, cr. .....2.50@3.00
Corn, lug. .....80@90
Cucumbers, lug. .....60@65
Egg Plant, lb. .....3@3½
Horseradish, lb. 15
Lettuce, cr. .....65@75
Leeks 35
Mint, doz. 40
Okra, lb 12
Onions, green, doz. .....25@30
Peas, Tel., lb. .....13@14
Peppers, Chili, bx., 40@50; Bell, lug .40@50
Parsley, doz. 20
Radish, doz. 30
Rhubarb, C. W. bx., 1.15; Strawberry .1.30
Spinach, doz. 30
Squash—Summer, lug .....50@65
Hubbard, lb. 2
Crookneck, lug .....40@50
Tomatoes, lug. .....60@65
Turnips, doz. .....35@40
Watercress, doz. .....35@40
Watercress, doz. .....35@40

FRUITS

Wholesale prices:
Apples—W. Astrachan, bx. .....1.75@2.25
Gravenstein .....1.35@3.00
Bellefleurs, bx. .....2.25@2.50
Cantaloupes — Standards, unwrapped Jumbo pack, Tiptops and Paul Rose, best, 1.00@1.25; cabbage crates, Tiptops and Pineapples, 3.25@3.50; White Rinds, 3.00; Casabas, 2.75@3.00.
Crabapples, lug .....1.35@1.40
Figs, lb. .....5@7
Grapes—Lb., Malagas, 3½; Muscats, 3; Liberty, 3; Tokays, 5@6; Cornichons, 6; best 4-basket crates, Concord, 1.40.
Nectarines, lb 5
Peaches — Lovell's lugs, best, 1.40@1.50; fy., Strawberry Clings, 1.75 lug; Curry Seedlings, 1.50@1.60 lug; Phillips Clings, 1.40 lug; Northern California Solways, lugs, 1.25@1.50.
Strawberry, lugs, best, 1.25@1.35.
Strawberry, lug .....1.50@1.25
Pears—Bartletts, 2.75@3.00 per packed box. Home-growns, various varieties, lb., 3@4; Beaumont and Hemet Bartletts, loose, 4@5 lb.
Plums—French Prunes, 5@6; Kelsey, 6.
Watermelons, lb. .....1@2

CITRUS

Lemons, packed, 5.00@5.50; loose 3.75@4.00
Oranges — Valencias .....7.75@8.50
Grapefruit .....3.50@4.00

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....18@20
Amber extracted 16
Fancy white comb, per case 6.50
Comb lt. amber, per case .....5.00@6.00
Beeswax, lb. .....32@34

BEANS

Price to retailers, cwt.:
Lady Washington 11.75
Navy 11.75
Pink 8.25
Tepary 8.00
Red Mex. 13.00
Lima 8.00
Blackeyes 11.00
Garbanzos 11.00
Cranberry 13.00
Soy 8.00
Lentils 21.00
Kidney 12.00
Henderson Bush Lima 11.00

HAY

Quotations by Nichols - Loomis Company. Prices to growers f. o. b. L. A.:
Tame Oat .....25.00@27.00
Volunteer Oat .....12.00@14.00
Wheat .....22.00@25.00
Barley .....22.00@25.00
Alfalfa .....18.00@21.00
Quotations furnished by California Alfalfa Growers' Association, Riverside, California.
No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS

See San Francisco market.

San Francisco Markets

San Francisco, September 10, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:
Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.
Dairy Exchange quotations, lb.:
Extras 55
Prime firsts 52
Prices Extras past week and year ago:

Sept.	3	4	5	6	7	9
'18 ...	53½	53½	54½	54	55	..
'17 ...	..	40½	41½	41½	42	..

Rcts. wk. ending Sept. 9, 249,000 lbs.

CHEESE

Dairy Exchange quotations:
Cal. Flats .....30@31½
Ore. Y. Am. 30½
Ore. Y. Am. 27½
Jack Cheese, full cream 28

EGGS

Dairy Exchange quotations:
Extras 63½
Selected Pullets 61
Prices Extras past week and year ago:

Sept.	3	4	5	6	7	9
'18 ...	63	64	63½	64	63½	..
'17 ...	..	44	45	44	44	..

Rcts. wk. ending Sept. 9, 8641 cases.

POULTRY

We quote to producers, lb.:
Per lb.: Large hens, 35@37; Leghorn hens, 33@34; broilers and fryers, ¾ to 1½ lbs., 42@45; 1½ lbs., 37@38; 2 lbs., 38; 3 lbs. and over, 35@36; old roosters, 22@23.
Ducks, live, 27@30.
Geese, 22@24.
Belgian hares, live, 15-17.
Squabs, doz., 3.50@4.00.

LIVESTOCK

Prices gross weight:
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.
Steers, lb., 9@11½; thin, 7½@8½; cows and heifers, 6@8; thin, 3½@5½; calves, 8@11.

Yes, We Have an Exhibit

at the

Tractor Demonstration

September 17-22, 1918

And We Will Be—

"Glad to See You"

Smith-Booth-Usher Co.

The Pump and Engine House of the Pacific Coast

LOS ANGELES

Sheep—Per lb. gross weight; Unshorn wethers, 11@11½; ewes, 8½@9½; lambs, yearlings, 12@12½; milk, 12@14½.

Hogs—Hard grain fed, weighing 100 to 140 lbs., 17¾; 140 to 300 lbs., 18¼; 300 to 400 lbs., 17¾.

POTATOES

Wholesale selling prices at wharf, cwt.:
River, new, cwt. .....1.95@2.60
Sweets, lb. .....4@4½

ONIONS

Wholesale selling price on wharf, cwt.:
Australian , Brown and Yellow.1.40@1.65
White, lb. .....2½@4
Garlic, new, lb. .....12½@15

VEGETABLES

Wholesale selling price:
Beans, String, lb. .....5@8
Limas, lb. .....5@6
Carrots, sk. .....75@85
Corn, green, sk. .....1.50@3.00
Cucumbers, lug .....85@1.25
Pickling, lb. .....4@6
Egg Plant, lug .....65@75
Lettuce, doz. .....15@20
Okra, bx. .....60@75
Onions, green, bx. .....65@75
Peppers, Bell, lug. 50@90; Chili....50@65
Peas, lb. .....8@10
Pumpkins, sk. .....75@1.00
Squash — Summer, lug. .....40@50
Tomatoes, lug .....50@1.15

FRESH FRUITS

Apples — Gravenstein .....1.25@2.25
Bellefleur .....1.25@1.75
Bananas, lb. .....7@7½
Berries — Ch.: Strawberries, 7.00@8.00; blackberries, 6.00@7.00; raspberries, 9.00 @11.00.
Cantaloupes — Turlock ponies, 1.00@ 1.25; standard, 1.25@1.50; flats, 50@65; Persians, cr., 3 to 5, 75@90; Honey Dew, cr., 1.75@2.00.
Casabas, cr. 1.50
Crabapples, small bx. .....1.00@1.50
Figs, bx. .....75@1.00
Honey Dew Melons, cr. .....1.50@1.75
Grapes—Seedless, 85@1.00; Malaga, 1.00; fy., 1.25@1.35; Black Prince, 85@1.00; Tokay, 1.00@1.25; Muscat, 1.00@1.25; Cornichon, 1.25@1.50; Isabella, 1.25@1.50; lug; Black, 1.50@1.75; Tokay, 1.75@2.00; Muscat, 1.75@2.00; seedless, 1.50.
Nectarines, cr. .....50@1.00
Peaches, bx. .....75@1.35
Pears, Bartlett, bx. .....2.00@2.50
Plums, cr. .....1.25@1.50
Pomegranates .....90@1.25
Pineapples, doz. .....4.50@5.00
Watermelon, lb. .....1¼@1½

CITRUS

Lemons, bx. fy., 4.00@6.50; lemonettes, 2.50@4.00; Valencias, 7.00@8.50; grapefruit, 4.00@6.00.

BEANS

Jobbers' prices, cwt., recleaned:
Limas .....13.10@13.25
Bayous .....7.50@7.75
Small Whites .....Nominal
Large Whites .....Nominal
Mexican Reds .....7.75@7.90
Blackeyes .....6.75@7.00
Pinks .....6.80@7.00
Red Kidney .....Nominal
Cranberry .....Nominal
Teparies .....7.50@8.00

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....17@20
Amber extracted 16
White comb, cs. .....4.50@6.00
Light amber comb, cs.....3.50@4.00
Beeswax .....32@34

HAY

Under date of September 7, Scott, Magner & Miller says:

Receipts past week, 1611 tons. Although these receipts are very light for this season, yet the market is slow and inactive. There is a little demand in the interior for hay but this is being furnished direct from shipping points and does not reach San Francisco. The government is using some hay right along, but owing to the fact that a great many animals have been moved from the Philippines and Hawaii, the usual trade for these places is much lighter than formerly. In fact, the trade for the Philippine Islands that used to require considerable hay is practically nominal at present.

Offerings of alfalfa are becoming heavier as the season advances and new crops are harvested. The fourth crop is now being baled and is reported to be excellent quality as well as satisfactory in quantity.

Straw is seldom seen on this market and there is no local demand for it.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market — for prices to consumers charges of cartage, commission and handling must be added according to conditions:

Fancy Wheat Hay (large 5 wire bale) .....26.00@27.00
No. 1 Wheat or Wheat and Oat Hay .....23.00@25.00
No. 2 Wheat or Wheat and Oat Hay .....20.00@22.00
Choice Tame Oat Hay .....24.00@26.00
Other Tame Oat Hay .....21.00@23.00
Wild Oat Hay .....19.00@23.00
Barley Hay .....19.00@23.00
Alfalfa, first cutting .....16.00@20.00
Alfalfa, second cutting .....22.00@24.00
Stock Hay .....18.00@21.00
No. 1 Barley Straw, bale .....50@80

GRAIN AND FEED STUFFS

Wheat—Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard white—	Per cental.
No. 1	3.66⅝
No. 2	3.61⅝
No. 3	3.55
Soft white—	
No. 1	3.63⅜
No. 2	3.58 1-3
No. 3	3.51 2-3
Club and Sonora—	
No. 1	3.60
No. 2	3.55
No. 3	3.48 1-3

For sacked grain add 9 cents per bushel of 60 pounds to above prices. Deduction of three-fourths of a pound is made for weight of standard grain bag. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to its merit.

Barley — No. 1 feed, 2.37½@2.45 per cental; milling, 2.55@2.60.

Oats — Red feed, 2.55@2.65 per cental for ordinary and 2.75@2.85 for choice; seed do, 2.90@3.10, with recleaned at 3.20 @3.40; black, 2.50@2.65 for feed and 3.00 @3.25 for seed; do, recleaned, 3.50@3.75.

SEEDS

Prices in round lots, lb.:
Millet, recleaned .....5@5½
Flax .....8@8½
Hemp .....5½@6
Rape .....2½@5

Citrus Fruit Market

Los Angeles, Sept. 11, 1918.

While lemons have suffered a very serious decline oranges have held their own and have even advanced in price. A great many sales were made around the $9.00 and $10.00 price.

Shipments

Shipments of citrus fruits to date since November 1, 1917: Southern California; oranges 13,460 cars, lemons 5365, total 18,825. To same date last season, oranges, 37,710, lemons, 7395, total 45,105. Central California this season: oranges 2536, lemons 115, total 2651. Last season to same date; oranges 4665, lemons 164, total 4829. Northern California; oranges 203, last year same date 845.

PARTIAL LIST CALIFORNIA FRUIT AND VEGETABLE SHIPMENTS

From post card reports to the Los Angeles branch of the bureau of markets, report is made of the following shipment of cars of products from California for the week ending September 9: Apples, 26; mixed berries, 4; cantaloupes, 18; casabas, 8; carrots, 4; dried apricots, 7; dried beans, 26; dried figs, 1; dried peaches, 1; dried prunes, 11; grapes, 554; lettuce, 7; mixed fruit, 19; mixed vegetables, 21; mixed fruit and vegetables, 23; onions, 63; peaches, 170; pears, 102; peppers, 6; plums, 4; potatoes, 136; quinces, 2; raisins, 44; sweet potatoes, 3; tomatoes, 51; watermelon, 29; New Mexico cantaloupes, 2; Utah peaches, 7; New Mexican pears, 2; Arizona watermelons, 1.

WEATHER CONDITIONS

San Francisco, Cal., September 7, 1918.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	.00	.43	.31	64	52
Red Bluff	.00	.12	.09	94	58
Sacramento	.00	.00	.04	90	54
San Francisco	.00	.00	.01	66	54
San Jose	.00	.00	.07	82	48
Fresno	.01	.01	.00	98	60
San Luis Obispo	.00	.01	.05	78	56
Los Angeles	.00	.11	.00	82	60
San Diego	.00	.04	.00	76	62

There's beauty in the thunder's roll
And in the ocean's roar.
I'd rather hear a ton of coal
That hits the basement floor.
—Washington Star.

They Fit All Tractors

Clark "CUTAWAY" DISK HARROWS

THE Light Tractor Double Action type embraces all features of the heavy engine harrows, adapting them for successful use with *all* Light Tractors.

Once over thoroughly pulverizes every inch of soil, resulting in bigger and better crops. Light Draft.

They have adjustable universal hitch—two levers set all four gangs—draft rods distribute pull uniformily—hardwood oil-soaked bearings in dust proof boxes.

Write for our book "The Soil and Its Tillage" giving interesting knowledge that you will like to have.

The Cutaway Harrow Co.

Maker of the original CLARK Disk Harrows and Plows.

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E. P. BOSBYSHELL CO. *General Agents Clark's Harrows*
Dealer in Farm Implements, Vehicles and Road Grading Machinery
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Zieglers Tractor Attachment

Pulling 2 14-inch Gang Plows in adobe soil, previous to winter rains

The Ziegler Tractor Attachment makes a solid, substantial tractor out of your pleasure car of any make—costs less than a pair of horses and will do the field work of from 6 to 9 horses—It has 48 inch rear wheels with 12 inch face, fitted with 18 2½ inch grousers which are easily removed for boulevard hauling. Anyone able to operate an automobile can operate this simple tractor. Complete attached to your car $395.

Valuable territory open for live agents.

We will demonstrate the Ziegler attachment on any ranch within 100 miles of Los Angeles.

Write for descriptive circulars, prices, territory reservations and agents' terms.

Zieglers Tractor Attachment

611 N. Western Ave. Los Angeles

DURING DEMONSTRATION WEEK STOP AT

MERRITT JONES HOTEL

OCEAN PARK, CAL.—

Official Headquarters

33⅓ % Discount in Rates

Make your business trip to the Demonstration a pleasure sojourn. Bring your family and enjoy the beach delights during Tractor Week. Only 20 minutes from Tractor grounds by trolley or motor. At special request of Tractor Association 33 1-3 per cent DISCOUNT in all rates. European plan, $1.50 per day, up—less discount. Excellent restaurants. Countless beach diversions. Wire or phone reservations at hotel's expense. Marine Street, Ocean Park.

CHANGE IN LOCATION OF TRACTOR DEMONSTRATION

to

Wilshire Boulevard

at

La Brea Avenue

September 17, 18, 19, 20, 21, 22

Traction Engine and Implement Dealers Association of Southern California

220 H. W. Hellman Building Los Angeles

CALIFORNIA CULTIVATOR

and **LIVESTOCK** *and* **DAIRY JOURNAL**

Los Angeles — *An Illustrated Weekly for the Rural Home and Ranch* — *San Francisco*

Vol. LI — September 21, 1918 — No. 12

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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Saturday, Sept. 21, 1918

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

The scene taken in a Yolo County rice field gives an idea of some of the food and some of the wealth being produced in California. Also an idea as to how more is to be produced may be had by reading the article on California wheat on the third page. California will never come back to its acreage production of a score of years ago when shiploads of grain were carried from the Pacific Coast to nearly all parts of the world, but the state may well use its best energies in securing varieties better adapted to the state in order that we may at least produce our own.

DOLLAR A DOZEN

Ohio University is urging poultrymen of that state who are anxious to secure long money on egg production to get busy at once. The prediction is made that in most Eastern centers one dollar a dozen will prevail before another egg laying season.

STUDENT WARRIORS

Boys in Cultivator families who have finished their high school course should take advantage of the wonderful opportunity offered by the federal government and the state university. There is being formed the Students' Army Training Corps in nearly every college and university of the country. California is preparing for large classes in this corps. The University of California is building barracks, and every young man eligible should enlist. The university is making plans to accommodate a minimum of 3500. Young men enlisting receive $30 per month, housing, subsistence and uniforms. Other educational institutions of the state are building barracks and planning for the same training.

JOSEPH LANE MERRILL

The citrus growers have lost their oldest and most faithful servant. Joseph Lane Merrill, oldest in service and oldest in years, treasurer of the exchange almost since its formation, died in Los Angeles last week. Mr. Merrill was one of the faithful kind who quietly attended to his own work, never took a vacation, and died in the harness at nearly 70 years of age.

SHOOT THEM ON THE SPOT

At the time when the American boys were charging on the Germans at Chateau Thierry a man wearing an American officer's uniform went amongst the men stating the Germans had surrounded them and immediate surrender was necessary. This was afterwards proved false, but the "officer" was not to be found. This was presumed part of a campaign similar to that carried on by Austrian officers in Italian uniform at the time of the great drive against the Italians. To discourage endeavors of this type in the American forces every American soldier is ordered to immediately shoot any officer or any person giving any such orders.

Peace at any price talk at home is practically discontinued, but there is an occasional faint suggestion, and patriotic Americans at home would like some pointers from the officers at the front.

DEMONSTRATION

We have so often chronicled the "biggest ever" that we will let that pass this time, but, really, there was never a tractor and implement demonstration — excepting, possibly, one at Fremont, Nebraska — which surpassed the great demonstration in Los Angeles this week. There are 60 different types or makes of tractors exhibited; there are something over 125 tractors in operation; there are over 1800 implements, one firm alone having over $30,000 worth of implements on the grounds. The spread of tents over a length of a mile and a half, has the biggest circus we ever saw double-crossed several times. Everybody's collar has that rich chocolate tinge along the edge which indicates they are getting into the thick of the dust and learning all about tractors and the implements which they are drawing through the heavy adobe soil.

Next week some glimpses of modern implement operation methods and of the personal side of this great demonstration.

USING THE BUTTERMILK

Some of our readers may recall the visit to the coast, under direction of the dairy bureau of the U. S. D. A., of Mrs. H. K. Davis. Mrs. Davis came to talk skimmilk, cottage cheese, buttermilk, and the helpfulness of these foods which too often are thrown away. We now note that the department of agriculture reports results of these campaigns. Salt Lake City showed an increase of some 250 per cent in the use of these foods; Spokane, Washington, an increase of 1800 per cent; and San Francisco appreciates skimmilk now some 400 or 500 per cent more than she did a few months ago. However. Mrs. Davis reported that Los Angeles was found to be consuming practically all of her waste product, and there was little possibility of increasing their consumption there.

We think we may add that California dairymen have a habit of eating some of their own skimmilk and buttermilk products and we know they have a habit of feeding it to the stock on the place, and that California's waste along this line has been exceptionally small.

CONSCIENTIOUS OBJECTORS

Most of the fool killers have gone to the war, but there is still need of a vigorous swinging of the stuffed club over conscientious objectors—and some other objectors. The most "conscientious" of this bunch we have heard of lives, we are glad to say, on the other side of the Mississippi, in fact, in Maryland. He objected to going to war so conscientiously that he was turned over to a county agent who placed him in a dairy as a milker. He refused to milk the cows because the product was to be used in one of the military cantonments.

COAST PRODUCTS

Notwithstanding California's light rainfall and lowered production of wheat, this entire district, that of the 12th federal reserve, will produce much more wheat than in 1917. The district's production in 1917 was 70,899,000 bushels; in 1918 it will be almost 91,000,000 bushels. On the other hand, barley shows a material shrinkage, dropping from 57,000,000 bushels last year to 51,000,000 this year. Other grain, such as oats, rye, corn, all show a material increase, while hay will show a shortage of about 2,000,000 tons. The district's greatest loss will be in sugar beets, which crop has been deserted by many in order to plant beans, potatoes or other more profitable crops. California alone has this year planted 597,000 acres of beans, a planting greater than last year by almost 40,000 acres. California's planting to rice this year will be about 108,000 acres, or about 28,000 greater than last year. Arizona has planted this year 92,000 acres of cotton, while last year's planting was only 46,000. California's planting this year is 194,000 acres, against 117,000 last year.

THE FUTURE OF THE AUTO

If any reader surmises from the title above that we are a qualified prophet and will answer as to what the future is, we wish to first disabuse his mind; we are only raising the question. Neither are we the first ones.

At the recent state fair the great plot of ground, in former years covered with two huge tents and filled with autos and auto accessories, was this year almost entirely unoccupied. One small tent, partly filled with autos, trucks, trailers and accessories, was only a reminder of former great exhibits. "Why?"

The answer given was: "War, restricted output due to the demand of the federal government, higher prices of tires, accessories, etc." This condition caused many a farmer to inquire as to further restriction and still higher prices. There are now 5,000,000 motor vehicles in use in this country. This is one to every 20 persons. Rural life conditions have been vastly changed by the advantage which the auto has given. In these cars 25,000,000 people, or a fourth of the population, can be transported 100 miles every day. It is impossible to imagine the changed conditions should use of these autos be discontinued, but such a result, even of this world war, is impossible, and while manufacture will be largely restricted we think the auto user, like the wearer of woolen clothing, will wear his tires a bit more threadbare. Better care will be given, and generally, more economical management permit continued use of the gas wagon.

This Week's War Notes

A battle on the Archangel front is reported between American, British and French forces and the Bolsheviki. The Bolsheviki were repulsed and have fled.

An American troop ship carrying 2800 of our soldiers was torpedoed last week. All were saved, the vessel being beached. The attacking U-boat was fired upon and blown out of the water.

Bolshevik forces in Siberia were routed in a battle north of Vladivostock on August 26. The Bolsheviki were said to number some 12,000 and to be poorly supplied with ammunition.

Finland is making preparations to welcome her German king, Henry Charles of Hesse. Through Sweden news comes that "it is expected the new king will open the Landtag in October."

A British steamer, the Galway Castle, en route to South Africa, was sunk last Friday. Nearly 200 persons were reported missing, half of whom are women and children. She was torpedoed by a submarine in a stormy sea.

Austria has made a plea for peace, or rather "to create those preliminary conditions calculated to bring the peace efforts nearer to realization and bridge the gap which at present still separates the belligerents from one another." The plea has been unconditionally rejected by our government.

The Servians are not all crushed yet. The reorganized army, cooperating with French forces and a few Greek troops, captured on Monday three strongly fortified Bulgarian positions in Macedonia, which the Bulgars have held for two and a half years. Later dispatches state that the Allies are advancing on a 12-mile front and have taken 3000 prisoners.

As illustrating the wonderful work of the American-British transport service, General March reports receipt of cablegram from France announcing debarkation at a port of France of 35,000 American soldiers in one morning, with 11,000 more in the afternoon. Of 15 ships entering the harbor that morning 12 were unloaded and ready to return in 24 hours.

The Huns on the western front continue their "strategic retirement with the enemy following though constantly repulsed." The Allies have crossed the Hindenburg line in many places and are near to it in all other sections. Scores of towns have been captured during the past week, and the Allies under General Foch manifest a disposition to allow no respite to the Germans.

It is planned to organize a motor transport corps of half a million men. The war department says: "Men qualified to drive motor vehicles are needed by thousands and men who have had executive experience are wanted for officers. Many men who were given deferred classification in the first draft, but who now wish to get into the army, are finding excellent opportunity for service in the Motor Transport Corps."

Documents proving continuous payment of large sums to Lenine and Trotzky by the German Imperial Bank have been made public by our government. By these it is shown conclusively that these so-called Russian socialists were paid agents of Germany long before the outbreak of the war. Lenine now is openly proposing alliance with Germany in order to repel attacks of the Czecho-Slovak. He says: "In order to save the power of the workers and peasants, we must not even recoil from an alliance with imperialists."

"The Yanks are off," shouted Paris as the American troops started their drive on the St. Mihiel salient, and in just 27 hours the salient which had been driven to threaten Verdun was "off;" the Yanks had captured 500 German officers, troops too many to yet give definite figures on, but perhaps around 20,000, a great number of machine guns and large cannon. It was one of the swiftest actions of the war, and being the first entirely under American command, has attracted the attention of the world. The battle was directed by Gen. John J. Pershing. The boys all say they were simply honoring the general's 58th birthday, and it all occurred on Friday, the 13th.

Early Baart---New Wheat Gives Big Yields

By Norman F. D'Evelyn

FROM all parts of the state gratifying reports of above average yields of Early Baart wheat have been received by the new agricultural department of the Sperry Flour Company, which has launched a statewide campaign built upon the slogan, "Plant More and Better Wheat."

Perhaps the most interesting report south of the Tehachapi is that just received from Robert A. Todd of Los Angeles. He writes:

"I had intended to plant all of my land (in the Imperial Valley) to White Australian but accepted your suggestion in part and planted 50 acres to Early Baart. If I had followed your suggestion in entirety and planted all of the acreage to Early Baart wheat I would have made a great deal more money than I did from my White Australian. We had a few warm days the latter part of April and this greatly damaged the White Australian crop. The Early Baart grew perfectly and yielded 20 sacks to the acre. The berries were plump and commanded the top price from the government. The White Australian berries were small and were classed as soft wheat by the government inspector. The Early Baart was easier to harvest than barley but threshing the White Australian was the worst job we have ever had on the ranch. The straw was as tough as Panama straw, and I should have been unable to harvest it had I not had a Harris harvester of my own.

"I am writing these facts to you, so that in case of inquiry from Imperial Valley farmers you will be in a position to advise them as to my experience with White Australian in the Imperial Valley. The yield from White Australian was much less than from Early Baart. I intend to plant about 600 acres to wheat this fall."

Similar reports from points scattered throughout the San Joaquin and Sacramento Valley have been received.

Warren and Sebbelov have just completed harvesting 800 acres of Bluestem and 50 acres of Early Baart wheat at Riego on the Natomas tract. Both varieties were seeded between November 10 and 20, about 80 pounds of seed per acre. The Bluestem came up about two weeks before the Early Baart and the latter made but half a stand on account, they figure, of dearth of rainfall (subsequent tests here, however, have not shown any difference in time of germination between the Bluestem, California, Australian and Early Baart). However, the Baart soon outgrew the Bluestem and showed a tendency to stool never equaled by any other wheat on the character of soil—heavy adobe with a few inches of sediment on top. Forty-two heads were noted on one stalk and the average was 15 to 20, while the Bluestem averaged from four to six. All heads are large and well filled. The Baart matured two or three weeks earlier and 51 acres yielded 974 sacks, or 19 sacks per acre. A perfect stand of Bluestem in two adjoining fields averaged 14½ sacks per acre. Next year these people are going to plant half their acreage to Baart. They are impressed with the advantage of being able to cut the Baart before the Bluestem gets ready.

One Hundred and Ten Varieties

In the county contest Yolo was the winner. One of the most prominent features was this grain exhibit. A professor from an Eastern agricultural college pronounces it one of the best grain collections he has seen.

On 90 acres of land of red clay and gravelly character north of Chico—land that had been rented at a nominal figure for the last eight or ten years and similar to thousands of acres used only for pasturage throughout the state—the Sperry Flour Company, owner of the property, harvested 512 sacks of Early Baart wheat this year. At $3.75 per hundred this crop is worth $2636.78 which, by the way, is almost three times the appraisement of the whole quarter section made by a man thoroughly posted on values in the vicinity. This wheat went 63 pounds to the bushel. Results on the poor land, especially in a season of extremely adverse climatic conditions, should be a lesson to the owners of similar lands who have regarded them as only fit for pasturage.

Some 2400 sacks of this wheat were taken off 249 acres of land in Colusa County, owned by H. W. Keller of Los Angeles. It weighed well over 63 pounds to the bushel and Keller is holding it for seed at a fancy price. The yield is above the average of the section and the quality so superior that after inspecting it Professor B. A. Madson of the university farm at Davis, the Colusa County farm adviser, and one of the government wheat advisers now on a visit to California are advising the farmers of Yolo, Colusa and Glenn Counties to plant Early Baart wheat.

Moreing Brothers, who have practically 20,000 acres in wheat on the Natomas tract, are thoroughly impressed with advantages of these early maturing varieties. This year on several big fields they have obtained as much as from 2600 to 3000 pounds to the acre.

This high grade, hardy, early maturing wheat is quite new to the farmers and millers of California, but it has become successfully established in Oregon and Washington and is today practically the only milling wheat in Arizona, where it was introduced 12 or 13 years ago. In that state the agricultural experiment station at Tucson has conducted careful, systematic experiments on probably 100 varieties of wheats for ten years, but no variety has been found or developed that would justify displacing the Early Baart, according to the testimony of Plant Breeder George F. Freeman. Conditions have reached the point there that millers insist upon the grain growers planting Early Baart if they expect to sell their output to the mills. The Sonora and White Australian varieties have been displaced by the Baart.

Preparing Seed Bed and Drilling

Modern power and modern implements make possible vastly better preparation of land, and assure larger crops, and the more economical soil handling is encourageing larger planting. Photos by Sperry Company.

Three years ago the Sperry Flour Company began a series of investigations on experimental farms leased by it, so that the tests could be made under actual field conditions, facing all the problems that confront the average farmer. It is worthy of note that the land selected was not the finest type of soil that could be had; on the contrary it was, for the most part, a very ordinary type, made up of red sedimentary adobe, black adobe and shallow red clay gravel.

The Australian exhibit of wheat at the Panama-Pacific International Exposition was purchased for the purpose. Twenty-nine varieties grown by different experiment stations in New Zealand and Australia were contained in the lot. After being treated for gluten and baking qualities in the company's laboratory at Stockton, 13 varieties were selected to be sown. Along with these it was decided to try out the Early Baart.

Three or four of the varieties planted seemed to have the characteristics of suitable wheats for California conditions both as to yield and milling qualities. Gluten and baking tests were taken on 12, which showed an average gluten content of 30.2 per cent, the highest being 38.8 per cent, in a smooth hard Durum variety, and the lowest 35.4 per cent, in a white milling wheat. The high average of gluten content in these wheats was a surprise, as the common varieties of milling wheat grown on the various fields surrounding this experimental plat showed an average of from 19 per cent to 21 per cent wet gluten, which has been the average for this character of land in the various wheat growing sections throughout the state.

No variety has proved out better than the Baart, and sufficient seed has been secured from the various plantings to give considerable scope to the campaign to increase the acreage of it. It is a bearded wheat of rather rank growth with a very heavy leaf. Although the straw is light it appears to be elastic and does not break off or shell out any worse than other California milling varieties. Best of all, it ripens from 10 to 15 days earlier than what have been standard varieties—a most decided advantage in view of California's often short springs and early, hot summers, with not infrequent hot north winds that have a tendency to shrink wheat not well matured. As a matter of fact, this wheat has shown a decided ability to withstand extremely wet as well as dry weather conditions. Only on bottom land are the Sperry experts at all dubious as to the adaptability of this wheat; its rather rank growth might cause it to lodge on river bottom or reclaimed lands.

The campaign now being waged by the pioneer milling company is a contribution to the nation's need for wheat, the foundation of "the staff of life," in the present world crisis. Its three years experiments have provided concrete facts on which to base the educational and field work. Men will be sent into every grain district

Continued on Page 279

A Good Stand

Even in a dry season soil prepared so as to conserve all the moisture may give heavy production.

Agricultural News Notes of the Pacific Coast

Northern California

The second annual Glenn County fair is being held this week.

Paradise, Butte County, reports the biggest pear crop in its history.

Yolo County has found success with two varieties of Turkish tobacco.

The hot weather of late August aided materially in ripening rice.

W. L. Sweet was recently appointed farm adviser for Butte County.

Nevada County women are aiding in the pear harvest.

There is a serious epidemic of anthrax in portions of Glenn County.

Hay fires are reported in many sections.

The rice mill at Gridley, Butte County, is being overhauled preparatory to the season's run.

Rice growers are constructing a $20,000 warehouse near Chico, Butte County.

Water users near Wyandotte, Butte County, are looking for a more adequate supply of water.

The Farmers Union of Gridley shipped a large number of canning peaches to Sacramento.

E. A. Bullard, a Woodland live stock man, consigned a ram to the Salt Lake City sale, which sold for $1000.

Fourteen counties have united in a Red Cross meeting at Sacramento to be held September 25 and 26.

Seven thousand sacks of grain were sunk on a barge moored at a Sacramento wharf.

The farm bureau of Placer County is now placing orders for winter hay supply for members.

Grape dryers are busy in Sutter County. Fifty-five dollars per ton is the usual charge for drying.

The Napa County farm bureau has decided to hold an auction of fat hogs at Napa early in November.

A specialist of the force of the United States biological survey is studying damage to rice crops from wild ducks.

Short courses for dairy farmers will be given at the University Farm at Davis, September 30 to November 8 and November 11 to 22.

The poultry producers of Central California are discussing the advisability of purchasing feed wholesale in order to secure more reasonable prices.

The food administration is investigating disposal of San Francisco's garbage in endeavor to find a means of saving valuable fats and other material.

Water users of Jacinto have secured favorable decision from the state railroad commission in their contention with the Sacramento Valley West Side Company against charges in excess of the legal rate for water.

The Glenn County farm bureau will hold local center night meetings at Willows, September 16; Millsap, 18; Plaza, 20; Grapevine, 25; Larkin, 27. There will be an afternoon meeting at Elk Creek, Wednesday, September 5 at 2:00 o'clock.

Officials of the state horticultural commission and county commission have been called on by citizens of Vallejo to correct conditions in the fruit market there. Complaint is made that the fruit under the top layer is almost invariably poor or bad.

Central California

Canneries are making quantities of fig jam this year.

Kings County expects to furnish about 4000 men in the new draft.

Watsonville, Santa Cruz County, reports light output of apples.

Short courses in agriculture begin at Davis September 30.

Muscat pickers are receiving three and three and a half cents per tray.

Watsonville, Santa Cruz County, held a dahlia show last week.

Nearly all raisin drying districts were visited by damaging storms last Friday and Saturday.

The Woman's Land Army is aiding materially in the harvesting of table grapes in the Lodi section.

Tehachapi's pears are ripening rapidly and that section will have large output this year.

Several thousand tons of raisins have already been delivered to the Associated.

During the last three months three new Granges have been organized in California.

Many Santa Clara County schools have not yet set date for fall opening, deferring opening on account of fruit harvests.

President Wilson has fixed the price for 1919 wheat at $2.20 per bushel minimum. This is the same as the 1918 price.

Tulare's tax rate for the coming year has been fixed at $2.40, an increase of 10 cents over last year's rate.

Several peach growers of Fresno County have turned over their peach pits to the Red Cross for sale to the government.

Packing houses are busy in every fig growing district of the San Joaquin Valley. The harvest promises to be one of the best for many years.

Raisin growers are making contracts for picking; the larger contracts at three cents, some of the smaller at 3½ cents.

Navelencia, Fresno County, is conducting ground squirrel campaign. The pests have been working havoc in all grain producing sections.

Wylie M. Giffen, at the head of the California Associated Raisin Company, has purchased a 1320 acre vineyard near Hanford, Kings County.

Oakdale, Stanislaus County, Almond Exchange has harvested a portion of its crop. That section shipped 14 cars of nuts last year.

State Commissioner of Horticulture Hecke has offer from a San Francisco sporting concern of $1.50 per gallon for dried grasshoppers.

Nine hay stacks valued at $7500 were destroyed near Bakersfield last week. It is thought the fires were set by I. W. W.'s.

San Jose Grange met last Saturday afternoon for inspection by inspecting deputy. A communication from Sacramento Grange was received in which the single tax amendment was condemned.

Fresno has shipped eight cars of peach pits, or rather shucks from which the kernels have been removed. This material, which has formerly been refuse, is made into charcoal used in the manufacture of gas masks for our boys in Germany.

Southern California

Now comes Imperial with appeal for relief from the duck pest.

Imperial Valley will produce about 70,000 bales of cotton.

A few sales of Lima beans have been made at 11½ cents.

Japanese tomato growers have fixed $18 a ton for their crop.

Assistant Farm Adviser Scribner of Los Angeles County is judging livestock at the state fair.

Eight hundred people attended the annual picnic of the Orange County farm bureau at the county park.

The Ventura County farm bureau has fixed $25 as fair price for polling and picking walnuts.

Announcement has been made that the United States food administrator will not set price on beans this year.

Talbert, Orange County, is harvesting the seed from a 180 acre tomato field.

Pomona College will use an orange packing house as barracks for young men receiving military instruction.

Reports from Orange County bean sections indicate crops running lighter than estimates.

Profs. Fawcett and Barrett are giving scaly bark demonstrations in Orange County.

The lima bean crop of the Inglewood district of Los Angeles County was not as heavy as was anticipated owing to the heat early in August.

The Palo Verde Valley, Riverside County, has 12,000 acres planted to cotton. Picking will not begin till October 1.

At the last meeting of the Pomona Valley Poultry Breeders' Association M. A. Schofield of Gardena made an address on poultry feeds.

All Southern California was visited by rain on Friday and Saturday. Beans and drying fruits and some grain were injured.

The Gardena Canning Company was closed two days, September 9 and 10, because of violation of United States food rules.

The serious losses to Southeastern cotton fields will probably result in greatly increased returns to the irrigated cotton fields of the Southwest.

The treasury department has finally made a ruling allowing irrigation taxes to be deducted from income tax returns.

Beekeepers of Ventura held a field meet at Foster Park recently. Beekeepers were also present from Los Angeles, San Diego, and San Luis Obispo Counties.

Bean growers of Southern California will meet in Oxnard at an early date to discuss marketing questions, especially in connection with the government's attitude.

At the recent meeting of the Pomona Valley Fruit Growers' Association action was taken empowering managers to care for groves of men called away to war service.

Bean and other growers of Ventura County recently met at Oxnard to devise some plan by which the labor situation could be corrected. J. P. Dargitz, of the state labor commissioner's office, was present. From reports made at the meeting it was determined that there was a shortage of at least 600 men.

The Coast and General

Fourteen counties in Oregon will hold county fairs this fall.

Branding and roundups are general in central Arizona.

Idaho reports its crop of sugar beet seed all harvested.

Cotton picking is general in Arizona and California.

Pig club members in Oregon unite in ordering feed in carlots.

Oregon's state fair will offer $500 for exhibits made by pig clubs.

Chicago is to hold this week an automotive and accessories exposition.

It is now estimated that the United States will have less than 85 per cent of a full potato crop.

The cacao plantations of Ecuador are in danger of being exterminated by a fungus disease.

Switzerland is rationing cheese, allowing half a pound per person per month.

America's increase in rye production this year will approximate 36 per per cent.

Farmers of Lyon County, Nevada, are cooperating in a plan to reclaim extensive areas now unproductive.

The state farm market bureau of Idaho has received orders for more than 100 carloads of hay.

Wenatchee, Washington, is shipping out 30 to 40 cars of fruit every day.

The Yakima Valley of Washington expects to ship out 25,000 head of sheep before the first of October.

Oregon's crop of hops is very light this season. Some growers are considering leaving unharvested because of the uncertainty of the market.

The state agricultural college of Washington is building a mammoth barracks and mess hall for 600 soldier students.

The Okanogan Valley, Washington, reports grasshoppers a serious pest, over 12,000 bushels of wheat having been destroyed on one ranch.

Germany allows a family to keep one hen without taxing it, but all in excess of that number are taxed 50 eggs per hen per year.

Some farmers on the Truckee-Carson irrigation project in Nevada have made large money on wheat and alfalfa crops.

Canada's output of wheat this year will be 20 per cent greater than that of 1917 and will aggregate about 280,000,000 bushels.

Brazil is greatly increasing its output of sugar. The increase has been from about 5000 tons in 1913 to 130,000 tons last year.

Arizona has 500 acres of bearing oranges and approximately 700 acres of recently planted trees. Ninety per cent of the crop is handled cooperatively.

A big tractor demonstration was held at Portland, Oregon, September 5-7 under the management of the Portland Tractor and Implement Association.

Prune growers of Polk County, Oregon, have formed a prune pool. The minimum price paid for the green fruit will be 2½ cents delivered at warehouse.

It looks as if Ukraine, the granary of Europe, may be losing her reputation, for we note that the price of a pound loaf of bread there is 40 cents and flour is selling at 39 cents per pound.

Farm Advisers Meet in Annual Convention at Sacramento and Davis

Written for California Cultivator
by Robert W. Hodgson

AS A FORERUNNER of the big drive for increased food production in 1919, farm advisers and farm bureau presidents from the 36 main agricultural counties of the state met in a two-day session, September 2 in the Capitol Building at Sacramento and the following day at the university farm, Davis. All who attended agreed that the convention was most successful in organizing plans for the food drive for the winter months and in stirring both farm advisers and farm bureau members to renewed efforts in the winning of the war through increased food production.

As chairman of the committee on food production and resources of the state council of defense, President Wheeler of the state university presided. In his opening address President Wheeler narrated the war activities of the state university along purely military lines. He stated that the university is now giving instruction to army and navy students along eight different lines. Among these activities are embraced three separate schools, housed on the campus, two of which are now in active operation, the third to be added soon. These are a school of military aeronautics and radio work, a naval reserve officers training school, and a school for enlisted men soon to be established.

The college of agriculture is bending every effort to help win the war, having been federalized soon after war was declared. A large number of its faculty are now in active service and many others have cheerfully been drafted into extension work to aid in food production. Among them are a number who are now serving as farm advisers. Every branch of the university is thoroughly organized and engaged in war work.

Work Accomplished Since the March Convention

The greater part of the morning session was given over to the reports from 28 farm bureau presidents present giving a summary of the work accomplished in their counties since the March convention of farm advisers. At that time a number of state wide projects for increased food production were adopted and campaigns have been actively under way during the present season in most of the counties having farm advisers. The reports indicated that in spite of a dry season a considerable increase in food production along most lines has resulted.

Hog Campaign

Due to lack of feed and high prices, at the time of the March convention California faced a marked decrease in the number of hogs. Brood sows and piggy sows were being shipped to the slaughter houses in large numbers. The army and navy needed pork, and word came from Washington to carry on a campaign to stop the slaughtering of such animals. A project designed to accomplish this was adopted at that time. The reports showed that 14 days after the campaign started the stream of brood sows to the packing houses stopped. The whole psychology of hog raisers and farmers was changed. The records show that this campaign induced 5105 farmers to keep 21,099 additional hogs. Of course many thousand more were not sold, purely on account of the publicity given the campaign.

Fire Protection Campaign

This year has been exceptionally dry. Realizing the danger from fire losses to be of exceptional importance in a time of national shortage, a project for fire prevention was adopted at the March convention. An educational campaign was carried on all over the state and fire ordinances enacted. Fire fighting companies were organized and apparatus purchased. The reports showed that in spite of the dry season and incendiarism fire losses have been much less than usual this season due to the farm bureau campaign. Santa Cruz County which has always been recognized as suffering great annual losses from fire, this season was well organized. The losses were lower than ever before in the history of the county. The reports showed nearly 6000 volunteer farmers organized into fire fighters with 61 fires controlled to date, and thousands of dollars saved to farmers with a great saving in hay and grain supplies.

Wheat Campaign

The campaign to increase the wheat acreage in California adopted last fall showed very gratifying results. As a result of the campaign over 100,000 acres additional wheat acreage was signed up. Due to unfavorable weather conditions only 40,000 of this was planted and the average yield was reduced some four bushels, making the total yield of the state 6,240,000 bushels this season as against 7,425,000 bushels for last year. Had weather conditions been normal there is little doubt but that California would have produced a bumper wheat crop.

Silo-Sorghum Campaign

As a result of the campaign to increase the growing of sorghum crops for silage purposes, and for the erection of silos to conserve stock feed, some 650 farmers undertook to grow silage crops. Nearly 20,000 acres additional such crops was secured through this campaign. Approximately 600 farmers indicated an intention to build silos of which 250 have already been constructed.

Labor Situation Discussed

Prof. R. L. Adams, state labor agent, addressed the meeting on the labor situation. Earlier in the season it was felt that considerable losses might occur due to an acute labor shortage. Professor Adams stated that in a few instances, as with the asparagus growers in the delta section, with alfalfa growers and in certain other cases, such losses have occurred but that no widespread losses had been occasioned this season. In fact, the labor shortage has failed to materialize except in certain localized instances confined mostly to the Imperial Valley and the more remote fruit districts. Climatic conditions this season account largely for this condition, since they have resulted in an average crop of only about 80 per cent. Had we experienced bumper crops the labor situation would have been much more acute. Therefore this year furnishes no criterion for judging our needs for next season and this fact should be borne in mind in planning for next year.

Fall Campaigns Undertaken

After considerable discussion, organized effort along two lines was undertaken, two state wide projects being adopted, one having to do with the increasing of wool and mutton production and the other to increase wheat. It was pointed out that at the present time the United States produces less than a third of the wool used in this country. Army and navy needs practically equal our total supply now, leaving little or no wool for civilian use. It requires the wool from 20 sheep to outfit one soldier once. With the program to double our military forces recently adopted, the need for wool will be greatly increased. It is up to the American farmer to raise it. It was decided to accomplish California's quota by inducing farmers to use small flocks on every farm. As sound agriculture nothing is better.

Sheep will live on poor pasturage otherwise wasted, keep weeds down, and the wool pays for their keep, leaving the mutton clear profit. About the only requirements are protection from dogs, and fences to keep them in. An organized campaign to establish a small flock of sheep on each farm will be carried on this fall. The college of agriculture is very much interested in this project and the division of animal husbandry through Prof. R. F. Miller has made arrangements to furnish sheep in car lots to farmers at prices ranging from ten to fifteen dollars. Most of the sheep will be range Merinos, ewes six to eight years old, but other stock may be had at higher prices.

California's wheat quota for 1919 will be larger than ever. A food reserve must be laid up against a time of need. The outlook for wheat as discussed by Mr. Starr of the wheat corporation is very bright. Barley was high last year on account of the lack of wheat and the suitability of barley for a substitute to send abroad. We did not have enough wheat for the tonnage available. Our corn was too soft to make good meal. Barley was the only crop left and its price went high. The 50-50 substitute rule also favored high barley prices.

This year the condition is precisely the opposite. We now have the 80-20 substitute rule and much more wheat. California's milling capacity is three times our present crop. We now have 60 per cent more barley in this state than we can use and it must be shipped out in order to dispose of it. Altogether the outlook for wheat is much better than for barley. Simply planting one-tenth the barley acreage to wheat will give us our quota, but we should double that and go over the top with a margin.

Much can be accomplished by better methods, insuring an increase not only in acreage but in yield. Among such methods are the use of a properly prepared summer fallow, good seed of a suitable variety, and the use of 100-150 pounds nitrate of soda per acre. California must produce her wheat quota.

Bulk Handling of Grain

The farm bureau went on record as favoring the bulk handling of grain as resulting in a great saving to the farmer. One farm bureau center in the state is now building a cooperative grain elevator.

Farm Home Department

A project to organize the country women on the same basis as the farm bureau is being pushed under the able leadership of Miss H. G. Eddy. County women home demonstration agents are to play a similar role to the farm home department as the farm advisers do to the farm bureau. The purpose of the organization as stated by Miss Eddy are first, through organized effort to help our farmer's wives to "carry on," second, to give such women an opportunity to get a broader culture and education, and third, to round out and make permanent the farm bureau.

Agriculture Club Work

R. M. Hagen, assistant state leader of boys and girls agriculture clubs, told farm advisers of the work the boys and girls are doing. Working along exactly the same lines for increased food production as the farm bureau, since March these clubs have accomplished the following: Raised 529 acres grain sorghum, 248 acres beans, 130 acres potatoes, 60 acres vegetables, raised 1855 fat hogs, 3785 chickens, 453 sheep, and 28 calves. Not only have they raised these quantities of food stuffs but they have done it profitably, serving in many cases as demonstrators to the farmers of the vicinity.

After attending such a convention one cannot come away without a realization of the potent force the farm bureau constitutes for the rational development of a permanent agriculture in California. Nor can he fail to note the earnestness and zeal exhibited by the farm advisers, than whom a finer band of patriotic "soldiers of the soil" does not exist.

Stop the Robber in Your Wheat Field

THERE is a robber in American wheat fields that steals millions of bushels of grain annually. But the 1919 wheat crop can be made burglar proof, as far as this particular robber is concerned, and food for thousands of soldiers will be saved. The disease known as smut is the thief and a simple treatment of the seed is the preventive. There are four kinds of smut which occur on wheat and barley, according to the United States department of agriculture, two of which (bunt or stinking smut, and covered smut) are effectively controlled by soaking or dipping the seed in or spraying it with formaldehyde solution. Loose smut is controlled by treating the seed grain with hot water.

Seed to be treated for smut should be cleaned in a fanning mill. Use formaldehyde (40 per cent solution) diluted at the rate of one pint to 40 gallons of water. If the soaking method is used, allow wheat to remain in a tub of the disinfectant 10 to 20 minutes, and barley 30 minutes to two hours. To get the best germination results, the grain should be sown as soon as treated. If this can not be done, it should then be spread out and dried, for improper drying after treatment may injure the seed.

Continued on Page 278

Power Shortage is Fuel Waste
Don't think you're saving by letting your engine, tractor or automobile motor run along short of power. The shortage is probably due to gas escaping through leaky piston rings—and you have to pay for it anyhow.
The surest way to get — and keep — maximum power and save fuel is to install a set of
McQUAY-NORRIS
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PISTON RINGS
The piston ring which is properly designed and constructed to give perfect bearing on the cylinder walls —save friction and undue wear on cylinders.
Your dealer can get you any size or over-size quickly. Over 300 jobbing and supply houses in all parts of the country carry complete size assortments. If you have any difficulty getting them, write us.
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A special ring for engines that pump oil. Used in top groove only of pistons to control excess oil, with McQuay-Norris LEAK-PROOF Rings in lower grooves to insure maximum compression and fuel economy.
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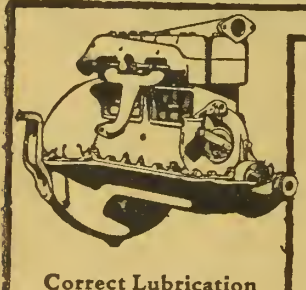

Correct Lubrication for the Ford Engine

The Ford automobile engine, illustrated here, like all *internal combustion engines*, requires an oil that holds its full lubricating qualities at cylinder heat, burns clean in the combustion chambers and goes out with exhaust. ZEROLENE LIGHT fills these requirements perfectly. *because it is correctly refined from selected California asphalt-base crude.*

"Zerolene is the Best"

—Say leading motor car distributors, because the records of their service departments show that ZEROLENE, correctly refined from selected California asphalt-base crude, gives perfect lubrication with less wear and less carbon deposit.

Most cars are now lubricated with ZEROLENE because their owners have learned through experience that there is no better oil.

ZEROLENE is the correct oil for all types of automobile engines. It is the correct oil for your automobile. Get our lubrication chart showing the correct consistency for your car.

At dealers everywhere and Standard Oil Service Stations.

STANDARD OIL COMPANY
(California)

ZEROLENE
The Standard Oil for Motor Cars

Our Fertilizer booklet will be sent on application. Our Agent is at your service.

Hauser Packing Company, Los Angeles, U.S.A.

Fertilize! *Fertilize!*

Hauser's Organic Fertilizers

Blood, Bone, Tankage

properly applied will increase your crop production. It's your patriotic duty to do this for bumper crops are necessary in OUR COUNTRY'S program of winning the WAR.

ORGANIC FERTILIZERS contain real plant food and our modern equipment insures the proper grinding and mixing thus facilitating the leaching out process when placed in your soil.

Our fertllizer booklet will be sent on application, our agent is at your service.

Hauser Packing Company
Los Angeles, U.S.A

Government Buying Wild Castor Bean Seed

The Californla Castor Bean Association of Santa Barbara has been permitted by the aircraft board to turn in on their castor bean contract all wild castor beans that are properly cleaned and sacked and are In good sound condltion.

They are therefore offering to pay three cents a pound for all wild beans in the hull, properly dried and stripped from the spike, either in small lots or in carload lots, f. o. b. Los Angeles.

They will also pay six and a half cents per pound for properly cleaned and sacked wild castor beans f. o. b. any of the following points: Colusa, Los Angeles, Hanford, Turlock, Brawley, Fontana, Imperial, Lancaster, San Jose, Santa Barbara.

Parties shipping to either of these places should notify us at least four days before shipping the unhulled beans and at least one week before shipping the hulled beans. This time is required in order to make proper provision for receiving and paying for the beans.

As the government Is urgently in need of every pound of castor beans procurable, it is considered a patrlotic duty to lend every assistance possible in the collectlng and delivery of these beans. This would afford an excellent opportunity to children of the various school districts In Southern California to pay their Red Cross pledges and to buy War Savings Stamps.

Urge everybody to lend every assistance possible in this matter.—California Castor Bean Association.

War Absentees' Property Cared For

TWO large cooperative organizations are taking a patriotic step in looking after the property of the enlisted men who have gone or are going to the front. The California Walnut Growers' Association and the Citrus Exchange will advance such funds as are needed to care for orchards or other property of the absentees, put competent men in charge and maintain oversight of orchard care, harvesting and marketing of the fruit. In case of non-productive orchards all monies advanced to maintain the property are to be without interest charge to the owner.

The corporations' attorney, George E. Farrand, has drawn an agreement which protects the property owner and at the same time gives the associatlon or its agent control of the property so that best service can be rendered. The grower authorizes the association to enter upon his property and to cultivate, irrigate, prune, fumigate and otherwise care for it; to harvest the crops and to market them through the association, and to make all necessary or proper advances or expenditures, including the payment of taxes or other assessments which are, or appear to be, liens against the property and which in the judgment of the association are required or desirable to care for or to protect the property and to market the crops, the grower agreeing to pay the total amount to the association and creating in favor of the association a lien upon the property for payment of such expenses.

In Attorney Farrand's memorandum regarding the procedure he recommends that the grower deliver to the association a complete financlal statement of his affairs, including a statement as to his title to the property, delivering to the association any certificate of title or other documents which would furnish information desired upon questions which may arise during his absence. An itemized inventory of all personal property should likewise be compiled and approved by the grower and the association. If property is mortgaged or is being purchased under contract, the agreement should be modified to fit those conditions, particularly if the association may be required to make any payments. If a surplus arises from the operation of the grove, the association should be definitely advised by the grower as to what disposition should be made of it. All statements, Inventories and directions should be in writing.

Investigation of Vallejo Fruit Markets

The state commissioner of horticulture received recently a communlcation from citizens of Vallejo, appealing for help in bettering the quality of fruit sold in that city. It was stated that it was the prevailing custom for dealers to display high class fruit and when purchases were opened up at home the fruit was found to be of a decidedly inferior quality. This practice among the dealers, it was sald, had been going on for a number of years and the dissatisfaction finally led to the above mentioned appeal for assistance.

Field Deputy O. W. Newman, together with the horticultural commissioner of Solano County, G. M. Gates, made a thorough examination of the conditions in the markets of Vallejo, and according to the report they were found to be very bad and to justify the complaint of the citlzens. Some packed frult was found not to comply with the standards of the fresh fruit law and in a number of cases apples packed as "California Fancy" were Infested with dry rot and other diseases. Several boxes of packed fruit were seized as evidence of the violation of existing laws and all the fruit men of Vallejo were notified that if they did not clean up wlthin a given number of days inspectors would condemn their stock until It had been culled to comply with the law.

The cleaning up of city markets is a step in the right direction, as the citizens of California have just as much right to good fruit as the people of the East and there is no reason why all first quality fruit should be sent to New York and other Eastern markets and the culls left for home consumption. The fresh fruit standardlzation law has done much toward improving the quality of fruits on the home markets and it is the intention of this office to utilize all powers vested therein to keep up a persistent campaign until all markets of the state sell in strict compliance with existing laws and regulations.

QUARANTINE PLACED ON BAMBOO

To prevent the Introduction into the United States of dangerous plant dlseases, Including the bamboo smut, the secretary of agriculture has placed a quarantine on the importation of bamboo seed, plants, and cuttings. The quarantine becomes effectlve October 1. The order does not apply to bamboo timber, consisting of matured dried canes, which are imported for fishing rods, furniture making or other purposes, or to any kind of article manufactured from bamboo, or to bamboo shoots cooked or otherwise preserved. Importations of seeds, plants, and cuttings may be accepted for experimental and sclentific purposes by the department of agriculture. Shipments in bond for immediate export may be permitted in accordance with the regulations which have already been approved governing such entry.

STOP THE ROBBER

Continued from Page 277

Solution of the same strength mentioned should be used for the dipping and sprinkling methods. In dipping, after thorough cleaning and grading, the seed grain is placed in gunny sacks, which should be filled not more than half full and tled at the top. After dipping repeatedly In the solution, the sacks of grain are put where they will drain and dry enough, so the seed will run freely through the drill.

If not used within two hours, spread the seed out to dry and air.

Application may be made with an ordinary sprinkling can while the seed is being shoveled over from one pile to another. One gallon is sufficient to cover a bushel of grain when this method is used. The grain must be so well stirred that every kernel is thoroughly wet. It is then covered with sacks or other cloth wet with formaldehyde solution, and allowed to stand for a period before being spread out to dry or sacked for use.

There are three methods of treating seed with hot water. The short method consists of dipping the wheat or barley for from ten to fifteen minutes in water ranging from 126 to 135 degrees Fahrenheit and cooling and drying it immediately. To control loose smut the seed should first be soaked four to six hours in cold water before treating with the hot, or a lower temperature than recommended for the short method should be used and the soaking prolonged. If the latter method is used, keep the water at from 111 to 115 degrees Fahrenheit and soak the seed for three hours.

Disinfecting seed grain will prevent certain diseases other than smuts (but not rusts), and thus may increase the yield even more than would be indicated by simply replacing the smutted with sound grains. More complete information on cereal smuts and the disinfection of seed grain is contained in Farmers' Bulletin 939, a copy of which can be obtained, so long as the supply lasts, by applying to the United States Department of Agriculture, Washington, D. C.

THE PLOW-MAN TRACTOR HAS COME TO CALIFORNIA

One of the first of the new tractors to California to arrive for the Tractor Demonstration was the Plow-Man made by the Interstate Tractor Company of Waterloo, Iowa. This tractor has been manufactured and sold in the wheat belt for several years, but not sold in California heretofore. The sales were so extensive that the factory made no effort to cover the West. Recently Messrs. B. G. Doak and E. C. Doak of San Francisco, formerly of the Standard Corrugated Pipe Company of that city, took the California distribution of this tractor and are rapidly lining up agents among implement dealers, former auto dealers and others throughout the state. The Plow-Man made its usual favorable impression at the Salina, Kansas, National Tractor Demonstration though it was well known throughout the territory from whence the larger part of the spectators came and had been demonstrated several times previously.

The Doak Brothers have been doing business with California farmers for 18 years or more and enjoy a splendid reputation in the business affairs of California. They have built several successful businesses, including the Doak Sheet Steel Company, the Standard Corrugated Pipe Company, also the Pacific Coast Steel Company, which is one of the largest steel companies on the Pacific Coast. A parts department has been installed with a full line of Plow-Man parts, and any tractor bought of the Doak Tractor Company will go and be kept going.

Two sizes 13-30 and 15-30 are offered. Both are wheel type. The construction of the Plow-Man is standard throughout.

WHEAT

Continued from Page 275

of the state to interview the farmers, learn their successes and failures, study the conditions under which they are farming, and finally, where the situation warrants, recommend the planting of the new wheat, without, however, even suggesting that they "put all their eggs in one basket." It is realized that every farmer will want to prove out for himself the merits of a variety to which he has not been accustomed.

The points to be emphasized are these: Better seed, true to type, and adapted to the soil and other conditions; the importance of adequate drainage; the incorrectness of the popular theory that California grain lands are worn out.

Finally, when conditions justify planting wheat as well as barley, the more remunerative crop will be recommended. Today a ten-sack crop of wheat is worth a 20-sack crop of barley. The pendulum is swinging back from barley to wheat in California in view of the diminishing need of wheat substitutes, the substitution of motive power for horse-drawn vehicles, and the decrease in the demand for malting barley. The wheat farmer is assured a handsome profit for many years to come.

It looks as if California may, to a great extent at any rate, regain the high place it held in the '80s and '90s as a wheat producing state. With the cooperation of the other millers, the farm bureaus and kindred federal and state agencies, and especially the farm journals and newspapers of the state, the Sperry Flour Company, through its agricultural department, expects to be a potent factor in achieving results in this direction.

It is not enough to deplore what the Huns have done. That will not hurt the Huns; they don't care what you think of them. Help your government to fight them. That is the only thing that counts with a Hun. When you save and buy War Savings Stamps you attack a Hun in the place where it hurts.

Food wasted is food lost and no money can replace it.

Save Money by repairing Your buildings Now with Pioneer Roofing

Don't wait until leaks occur and cause a lot of damage. Have your roofs put in weather-proof condition at once.

Best results—long wear and less repair—will be obtained by using the old reliable PIONEER ROOFING which has stood the tests of 30 years. It's the one roofing that you can always count on to give satisfaction.

Ask Your Dealer —for Pioneer and if he cannot supply you, write us.

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TEN (OF MANY) CASE Betterments

1 Weighs only 3400 pounds, little more than a team of horses. Low and compact with short wheelbase. Turns in 22 ft. circle. Stays on all fours.

2 Rated 10 H. P. on drawbar, but develops nearly 14 H. P. Rated 18 H. P. on the belt but delivers about 24 H. P. This insures abundant reserve power.

3 Four cylinder Case valve-in-head motor. Removable head. Motor is set crosswise on frame, affording use of all straight spur gears. This conserves power.

4 Belt pulley mounted on the engine crank shaft. No gears used to drive it. Pulley is part of the tractor, not an extra-cost accessory.

5 All traction gears are cut steel, enclosed and running in oil. No bevel gears, chain, worm or friction drive parts.

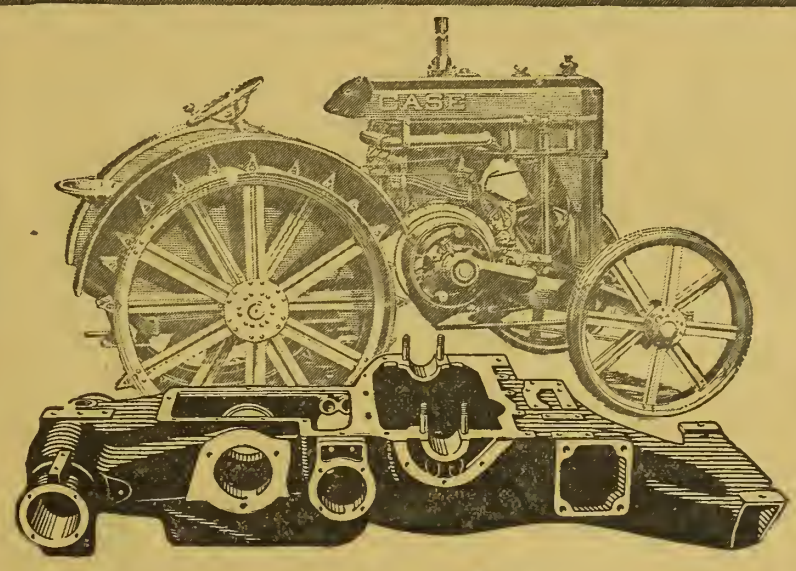
6 Case-Sylphon Thermostat controls cooling system and insures complete combustion of kerosene in the motor. Prevents raw fuel from passing by pistons and diluting oil in the crank case.

7 Case air washer delivers clean air to carburetor. No grit nor dust gets into cylinders to minimize their efficiency and shorten their life.

8 All interior motor parts lubricated by a combination pump and splash system. Speed governor, fan drive and magneto are dust proof and well oiled.

9 Complete accessibility. No dismantling necessary. Removable covers permit you to get at parts quickly.

10 Hyatt Roller Bearings in rear axle, bull pinion shaft and transmission case. Kingston ignition and carburetor. Five-piece radiator with a cast frame. Core is copper. Fin and tube non-clogging type.



This One-Piece Main Frame

Reduces Vibration—Prevents Disalignment

Here we picture a new tractor achievement — the frame of a Case 10-18. It is the fore-runner of new-day ideas in designing.

Note that this casting constitutes a dust-proof housing for the rear axle, bull pinion shaft, transmission shafts and the bearings for these parts. It also provides a base for the motor, which sets cross-wise.

This type of frame construction brings rigidity unattainable in a fabricated frame. It insures constant alignment of bearings, shafts and gears. Owners avoid gear troubles. Thus we prevent power losses.

And we multiply strength while reducing weight.

This one-piece frame is one of the greatest advancements in tractor history. It was inevitable. Others are bound to follow. But Case is in the lead. Case offers you now, today, what later on will be adopted generally.

This is only one of many betterments, some of which are itemized at the left. Do you know of any tractor offering all these superiorities?

A complete description of the Case 10-18, with illustrations and specifications, will be mailed upon request. Write for it today. Or visit a Case dealer.

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CASE KEROSENE TRACTORS

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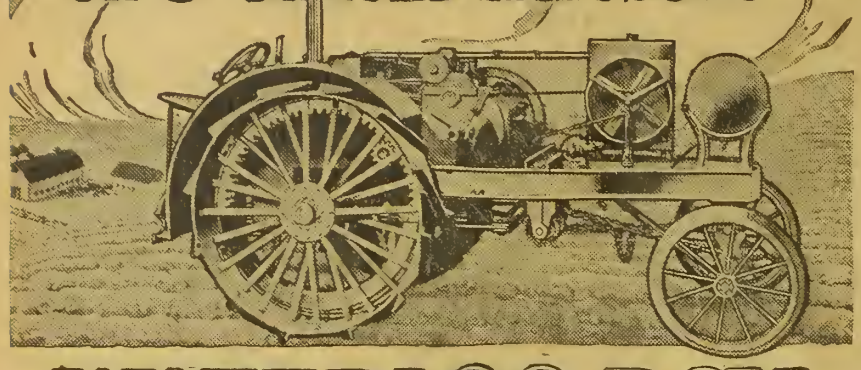
Plowing Record 8 Acres per Day on 8 Gallons Kerosene



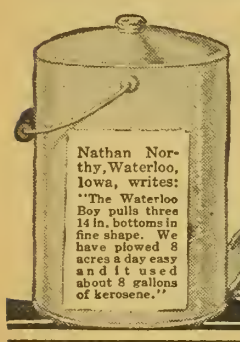
WATERLOO BOY

Original Kerosene Tractor

The Waterloo Boy plows more miles of furrow per dollar of fuel cost, because our patented, inbuilt kerosene manifold is different from every other. It refines kerosene into a powerful explosive gas—gets full power from every drop of fuel.

Excess Power for Emergencies

The Waterloo Boy has demonstrated its ability to do good work in all soil conditions—gumbo, hard pan, sod and flooded land—uphill and downhill. Guaranteed 25 H. P. at belt is ample for threshing, silo filling, etc.


Nathan Northy, Waterloo, Iowa, writes: "The Waterloo Boy pulls three 14 in. bottoms in fine shape. We have plowed 8 acres a day easy and it used about 8 gallons of kerosene."

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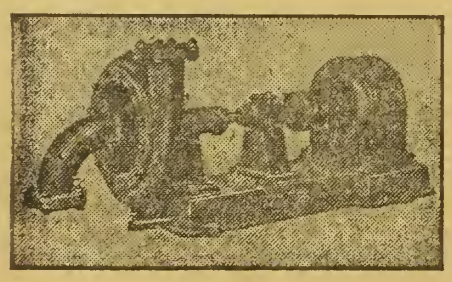

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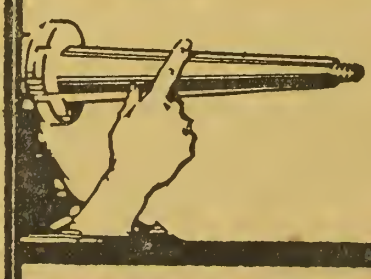

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Ornamental Planting Calendar for September in Northern California

Written for California Cultivator By A. R. Gould

TOWARDS the end of this month our floral display will be getting less brilliant, but the dahlias, cosmos and chrysanthemums will be doing duty, and a few hardy subjects in the perennial border will furnish us with color and lots of cut flowers. Many of our trees, shrubs and climbers will be taking on an autumn color. Nothing is more pleasing than the wonderful foliage of the Boston ivy, which by the way may be propagated this month by securing branches of ripe wood. If these are cut about 10 inches long and inserted in sandy soil they will soon throw out roots, in fact a few branches coming from the parent plant, growing close to the ground may be already trying to root themselves, and these may be cut off and placed in sandy soil to establish themselves; after which they may be planted out. This climber will cling to almost any wall, brick or concrete and even wood.

Flowering Shrubs

Many of these will need attention, and all dead flowers may be cut off. Especially does this refer to hydrangeas, but in pruning care should be taken to look for the new shoots and cut back to these. The oleander will also need the same treatment, and as this shrub is also frequently attacked with a black scale insect it should be sprayed with a mixture of whale oil soap and nicotine. All dead flowers should be picked off the rhododendrons. Genista scoparia, commonly known as the Scotch broom, will now be bearing seeds which should be collected and sown at once. The same will also apply to the Spanish broom.

Chrysanthemums

Continue to feed these with liquid manure and where large blooms are desired the terminal bud must be left only and others removed on each stem. A gentle overhead spray morning and evening will also help these considerably.

Gladiolus

Many seeds of these should now be ripe and may be collected and sown in a box of sandy soil placed in a fairly warm situation. Avoid sowing the seeds too thickly as they may then be left to grow on in the boxes for some months before there will be any need to plant them out. It is most interesting to watch the development of these from the seedling stage.

Perennials

Michaelmas daisies, or hardy asters, will be flowering this month, and seeds of other perennials such as hollyhocks, aquilegia, erigeron, anchusa and the oriental poppy, should be collected and sown if new stock is required for future plantings. Seeds of many other subjects in this section such as delphinium, arabis, aubretia and alyssum, should also be sown. The last three named are excellent subjects for rock planting, edging or carpeting for flower beds. They are early flowering and very hardy.

Freesias

Bulbs of this very fragrant flower may be planted this month. Purity and Barris primrose are two very excellent varieties. A few may be grown in pots, plunged in ashes or sand for the first few weeks after potting to encourage root action. When buying the bulbs see that you get the large bowering size. A little well rotted manure mixed in the soil will give pleasing results.

Pansies and Violas

Secure the large flowering pansies and sow the seeds. The viola also may be had in the following varieties: V. lutea, V. white, Blue Perfection and Purple Queen. It is in flower much longer than the pansy and looks well planted in solid colors.

Cyclamen

Bulbs of this popular flower which should have been dormant or resting the last few months should now be started into growth if they are needed for the Christmas season. Pot these up into five or six inch pots in rich soil and water moderately at first. Place them in a fairly warm situation but shade from the direct rays of the sun.

Winter Flowering Stocks

Plants of these should be secured and planted out this month. Nice purple is an excellent color and also Crimson King. Mont Blanc is the best pure white.

Art in the Garden

Written for California Cultivator By Ernest Braunton

TO GET art in the garden we must use restraint. When we overdo in plan or planting art quietly escapes, unnoticed, through a hole in the fence or hedge. For art is never obtrusive, nor forces its tenets upon anyone. It is so modest it has to be very gently wooed in order to be won. Simplicity is the true foundation upon which art is built or wrought and those who seek it must refrain from excesses quite common in modern gardening.

The famous William Morris, in his "Hopes and Fears for Art" says: "Another thing also much too commonly seen, is aberration of the human mind, which otherwise I should have been ashamed to warn you of. It is technically called carpet-bedding. Need I explain it further? I had rather not, for when I think of it, even when I am quite alone, I flush with shame at the thought." So far from the garden being ugly, it should be beautiful. As against bareness it should overflow with plant life. Instead of being cut up or spotted with carpet-beds there should be quiet stretches of green lawn, with flowers in the border. In contrast to conventionality there should be ease and simplicity of lines, gently flowing curves, and a general air of rusticity.

Art, especially in the garden, is based upon a love for nature and a deep study and close observation of her teachings. Fidelity to nature is the standard by which art is judged, whether it be garden design, landscape painting or the statue of the sculptor. In the broad field of art human products are judged by this same standard. How stand ye in the garden? Have you wrought aright? Or have you frittered away your grounds in a way that neither compensates nor satisfies? When you enter your garden you should feel contented, not irritated, reproached or reproved. You should feel comforted and at rest. The garden itself should have an air of repose, a quiet restful scene that awakens no feelings except those of admiration, sufficiency, and comfort. It should speak of ease, be pleasant to the eye, fragrant to the nostrils, soothing to the nerves, and beloved of all visitors. If you have so wrought you have indeed builded the "garden beautiful."

Overwhelmed Gardens

Some time ago I was called to design a rural garden where the owner confessed to having subscribed to the California Cultivator for many years, but had not of late years read it. I am confident that a close perusal of our garden "lore" would have prevented making a great mistake. The grounds at disposal for the ornamental garden were limited as to size, with a fair frontage along a finished street but with a very restricted depth. This situation would at once suggest approach to the house from the highway only, for why use the limited space for a driveway and necessary loop when the public had provided an excellent paved street still closer to the front door than it was possible to

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get, with a conveyance, from the grounds.

But I was not asked to design the garden as I thought best, or even to suggest the proper plan or layout. I was asked to plan a driveway and loop between house and orchard on the sides and between orchard and garage on the rear and the splendid and sufficient street on the front. The owner had spent months in a vain endeavor to study out how it could be done without using all the space for traffic. But the magic of the landscape designer was presumed to render all boundaries elastic and thereby provide, in addition to the drive, space for all the fine trees, shrubs and beds of flowers, the possession of which had been a dream of years. But the area would not stretch, the drive was planned. The lines were not quite so easy of negotiation by a big automobile as they should have been, and very little space was left for trees and flowers. This is what I call an overwhelmed garden. The drive was the dominating feature. In fact, it was the only feature. Do we need to ask what should have dominated? A close reading of our leading article will disclose what should have been, and was really what the owner desired, for the driveway was not built. Do not overwhelm your garden with things that are not of the garden; and driveways are not. Have only such drives and paths as are necessary; let the remainder be just garden.

Berried Plants

Quite recently I visited a garden where months before I had admired great masses of shrubbery covered with nearly equally solid masses of red and orange berries. They were still there; hundreds of pounds of them, still beautiful and the strongest attraction of the garden. We should plant more liberally of cotoneasters, crateagus and pyracantha. All bear heavy crops of berries that remain on the bushes for months and all are shrubs of beauty without either flowers or fruits. It is only of recent years that we have begun to grow and show deep appreciation of berried plants, but in England they have been favored plants for centuries, or ever since their introduction to commerce by the discoverer.

Autumn Lawn Work

Just as soon as the hottest weather is past is a good time to make new lawns or patch up old ones. During hot weather it is nearly impossible to keep the top soil damp enough to protect the grass seed, even though watered a half dozen times a day. If the seeds dry after sprouting the crop is lost. With cooler weather this difficulty has passed away and blue grass seed grows just as readily in cool weather as in mid-summer. It is better not to wait too long to sow lawns or in cold sections early frosts may come and catch the grass in the milk stage and destroy so much of it as to leave insufficient for a good lawn. Do not fertilize lawns in autumn as rains wash away all plant food and leave but a dead mulch behind, though of some value.

SEPTEMBER GARDEN PLANTING CALENDAR FOR ARIZONA

Vegetable Seeds

Beans, beets, cabbage, cauliflower, cucumber, kohlrabi, kale, lettuce, onion sets, peas, radishes, spinach, turnips and Lawn grass.

Flower Seeds

Ageratum, mignonette, freesia bulbs, cosmos, phlox, nasturtiums, pansies, sweet alyssum, hollyhocks, zinnias and Christmas flowering sweet peas.

We harvest grain sorghums, broom corn, cowpeas, peanuts, cotton, melons, grapes, plums, peaches, apples, pears, dates and pomegranates.

HOW TO DETERMINE THE APPROXIMATE DRAW BAR PULL

To find the aproximate draw bar pull of a tractor traveling two miles per hour, multiply the rated draw bar power by 180 pounds. For instance, a tractor rated at eight horse power at the draw bar (at a two mile speed) must have a pull of at least 1440 pounds to make good on its rating. This should be a conservative estimate of its pull.

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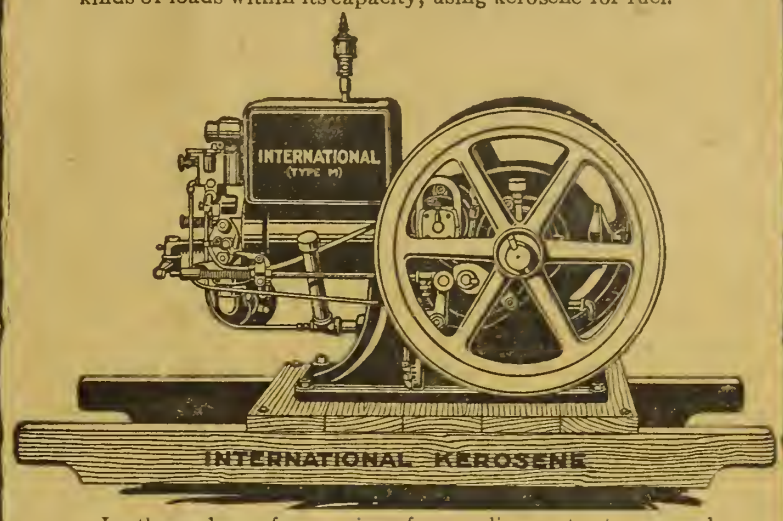
EVERY engine in the International line, from the smallest to the largest, operates on common coal oil. Every International engine will develop its full rated horse power, at all times and under all kinds of loads within its capacity, using kerosene for fuel.



In these days of war prices for gasoline, extra taxes, and none too plentiful supply, there is both safety and economy, to say nothing of patriotism, in using kerosene engines.

Add to this the economy that results from using an engine that conserves fuel, that is always ready for work and that lasts so long you forget what you paid for it, and you have some of the reasons why International engines sell so fast.

We have all sizes, from 1 to 15-H. P., with a special line, the **International Type M**, in 1½, 3, and 6-H. P. sizes. Here is a line of real farm engines that no farmer can afford to overlook when he is in the market for an engine. See your local dealer or write to us for complete details.

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A 20 POUND FOUR YEAR OLD bred to Aaggie Cornucopia Pauline Count 40th.
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THREE DAUGHTERS OF A 30 POUND SIRE.
TWELVE DAUGHTERS OF HERMANA IGNARO who is by a son of Ignaro De Kol, the only sire with nine daughters above 20,000 pounds milk in one year, his entire list of yearly tested daughters, 14 in number, averaging 20,543.4 pounds milk.
TWELVE COWS AND HEIFERS bred to 30 pound sires .
THREE COWS AND HEIFERS bred to a 40 pound sire.
COWS AND HEIFERS of splendid breeding bred to King Segis Alcartra Prilly, Grand Champion at California State Fair, 1917-1918.
And many other females of equally attractive breeding and type.

BULLS

HUBBAVALE ARTIS TWISK NETHERLAND. This grand young bull will not be two years old until December, and is sold only because Mr. Outland is dispersing his entire herd in this sale. He is sired by a son of Artis Pontiac Winana out of Statia De Kol, a 31.32 pound daughter of Lord Netherland De Kol. His dam is a 30.27 pound daughter of Aaggie Cornucopia 3d's Count, giving him an average for his dam and sire's dam of 574.9 pounds milk and 30.79 pounds butter in seven days.
SIR CHIMACUM WAYNE WOODCREST. Just past two years of age, and an individual that would not be out of place in any show ring. He is sired by a son of the former world's record cow Margie Newman out of Chimacum Wayne Boon, the highest yearly record daughter of Sir Veeman Hengerveld. His dam is Chimacum Maud who made 624.8 pounds milk and 29.80 pounds butter in seven days last winter as a junior three year old and is one of the best candidates in the Bridgford herd for a large record. She in turn is out of a daughter of Homestead Girl De Kol Sarcastic Lad with a record of 24,497.4 pounds milk and 960.80 pounds butter in one year. The three nearest dams of this splendid young herd sire average 643.3 pounds milk and 29.98 pounds butter in seven days, while the sire's dam and dam's dam average 23,896.9 pounds milk and 1047.44 pounds butter in one year.
Watch future announcements for other feature animals to be sold in this sale. Write for catalog.

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Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Probate of Will

A parent dies in the East leaving three heirs, two of whom reside in the East and one here. The will was promptly read in the absence of the California heir, it having been the request of the parent that a certain third party be present and act in his place. The husband of one of the Eastern heirs and the other Eastern heir were appointed administrators, the first of whom is now dead. Was this a legal procedure? Should the California heir have been legally notified of the reading of the will?—Subscriber R. B.

The matter of probate procedure is purely statutory, and the statutes of the different states differ widely in this respect. It is frequently the case that there is no necessity for actual notice of application for probate of will or administration upon an estate to those of the heirs residing outside of the state. The mere opening or reading of the will is not within the contemplation of the law. Upon filing the application for probate of the will the will is filed with the proper officer of the court and remains there; anyone can procure a copy as it becomes a public record.

"Keeping Up" Chickens

A owns a grove adjoining B and has planted a cover crop therein and requested B to keep his chickens closed up. B has supplied five families with eggs in the year round with his hens, but since closing them up has had but two eggs a day and if kept closed will have to dispose of his chickens. Does B have to keep his chickens closed?—Subscriber.

B does not have to keep his chickens closed up, but he does have to keep his chickens off from the property of A, and if he cannot do that in any other manner he had better dispose of them unless he could arrange to pay A out of his profits for the damage caused to A's crops, if any.

Real Estate License

Is it necessary for a real estate agent, loaning money on commission, to have a federal license? I understand this license costs $100 and without license one so acting is subject to fine of $2000 and two years imprisonment. Also the same situation in respect to the insurance business, and that if a man handled both he would have to have a license for each. Is this correct? — Subscriber, Long Beach.

There is no federal law requiring such license or licenses. There is or was a state law requiring any person who for compensation offers to negotiate for the sale, purchase, or exchange of real estate, or loans thereon, or to collect rents as a whole or partial vocation to apply to the real estate commissioner of this state for a license to do said business which application must be in writing and accompanied by the recommendation of two real estate owners in the county certifying to the good moral character of the applicant; he must file a bond to the state of California conditioned for the faithful performance of his duties, in the sum of $1000; his annual license fee is $10. The act does not affect insurance brokers. Upon conviction of violation of the provisions of the act a person may be punished by fine of not to exceed $2000, or by imprisonment in the county jail or state prison not to exceed two years, or both, and be held liable upon the bond above mentioned for any damage caused to those with whom he deals. Portions of this act have been held unconstitutional by the supreme court recently.

Justice Court

In suing upon a note or account before a justice of the peace is it necessary to employ an attorney? Please tell me just what to do.—Subscriber, Pasadena.

It is not necessary to employ an attorney to bring suit in any court in this state and any one may carry on any such suit to final conclusion even up to the supreme court without an attorney, according to the letter of the law. A suit in a justice's court is commenced by filing the complaint, which is not required to be in any particular form but must be such as to enable a person of common understanding to know what is intended; it must be in writing and state the facts constituting the plaintiff's cause of action or a copy of the note, bill, bond, or instrument upon which the action is based. A summons is thereupon issued by the justice which must be personally served upon the defendant; if the defendant answers then the case must be set down for trial and the evidence produced.

Tenant Fails to Pay

Kindly state what course to pursue to get rid of a tenant who fails to pay his rent—Subscriber, Pasadena.

The landlord may serve notice requiring payment of rent within three days or possession of the property; the notice should state the exact amount due, the term for which it is due, the agreement under which it is due, and the property upon which it is due should be described. The notice should be dated and signed by the owner. If at the expiration of the three day period the tenant has failed to comply with the terms of the notice the landlord may bring suit for unlawful detainer of the premises and may obtain judgment for the possession of the premises together with treble the amount of the rents. If the rental of the property is under $25 per month the suit may be brought in either the justice court or the superior court; if over that sum then in the superior court.

Selling Milk

Are there any legal restrictions preventing a farmer from selling his surplus milk or butter to a neighbor, or from selling his butter to a store? What can be done to remedy any objections which may exist?—Subscriber, Sanger.

An act to prevent the sale of impure milk and milk products was passed in 1917. This act makes it unlawful for any person to sell the products from any cow which has not passed the tuberculin test, until it has been pasteurized, excepting sales to the wholesale trade. It is also made unlawful for anyone to sell milk in any locality where there is a milk inspection service without obtaining the approval of said service and the grading of the milk by said service in accordance with the provisions of the statute. You should ascertain the fact as to the establishment of a milk in-

Layne & Bowler

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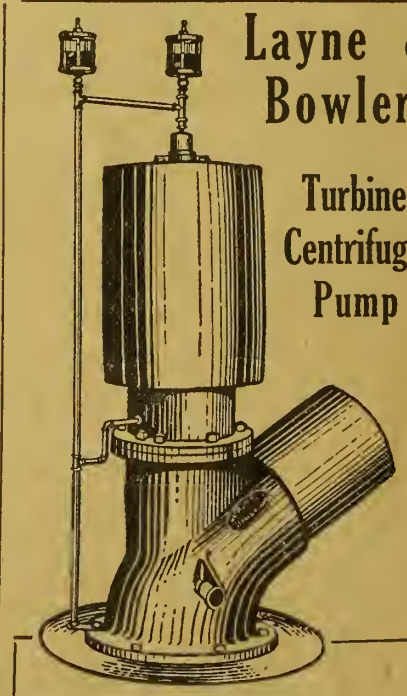

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spection service in your county or locality; if there is none such then you should file a written request with the state veterinarian that your cows be given the tuberculin test; upon filing that request you may sell until such time as the test is made and then in accordance with the test.

Selling Meat

Is there a state law requiring persons selling meat at retail to give bonds? If so, does it include country districts? Would it prevent one farmer from selling his surplus meat at butchering time to another? Does it do away with selling meat at free public markets?—Subscriber, Artois.

In 1917 there was passed an act establishing a cattle protection board; among the provisions of this act there is one requiring everyone slaughtering cattle as a business to first procure a license so to do from the protection board and to execute a bond in the sum of $1000 conditioned that he will not slaughter cattle or sell cattle or the meat thereof unless he is the owner thereof or authorized by the owner to slaughter and sell; he is required to make report monthly to the board of his purchases and the brands thereon. No retail butcher may purchase from any unlicensed slaughterhouse and every retailer must keep a record of his purchases. A rancher definitely located may, however, slaughter in small numbers upon his own premises for his own consumption and he may sell or give away a portion of the meat. For this he does not need to give bond or take out a license, but he must keep the hides of all cattle slaughtered or removed from cattle which have died from any cause, in his possession where they may be inspected with brands attached and without alteration or disfiguration for at least 15 days after the death of the cattle or until they are inspected. He must also keep a record in a book to be kept for that purpose, of all cattle so slaughtered, with a description, including marks and brands, and the date of slaughter and at the end of each month he must make a true and correct copy of said record and send it by registered mail to the office of the Cattle Protection Board in Sacramento; he must also exhibit his book record on demand to any officer of the state. Any violation of the provisions of the act is a misdemeanor. It would seem that there is no provision in the act in reference to public markets, but a rancher complying with the above terms applicable to his case should have no difficulty in that respect.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.
Unsigned communications receive no attention.

Fallen Fruit for Cattle

I want to turn some small yearlings into a pasture which has late pear and apple trees with some fruit on: Will there be any ill effect from the cattle eating the green fruit? If it does affect them and I should find one sick what would be the best treatment for it? A neighbor recently lost a horse from overfeeding green pears. Could he have been saved and how?—Subscriber, Julian.

Fallen fruit will not hurt stock unless they eat too much of it or one gets lodged in the throat or between there and the stomach and chokes the animal. An apple lodged in the throat may sometimes be gotten up, but usually you have to push it down into the stomach, but not with a straight stick or hoe handle. Use a buggy whip or still better a probang, which is a flexible instrument made for that purpose. Put a block of wood that has a hole in it into the mouth and pass the probang through it. The probang should be six feet long to reach the stomach of a full sized animal. If they eat too many apples it will cause indigestion and then they usually bloat. The best remedy for that is raw linseed oil and turpentine, two ounces of the turpentine to each pint of the oil. The size of the dose to be governed by the size of the animal, a pint for a calf and a quart for a grown animal. A larger dose will not do any harm. They are also sure to bloat when choked but that will go away when the apple is removed.

Foxtail in Stomach

I had a cow that was sick for some time. She got so very poor that at last I had her killed. When we opened her we found her lungs in perfect condition but there were three balls of foxtail about the size of one's fist in her stomach. They were quite hard. My hay that was cut last spring was mixed with some foxtail. I have another cow that I think is going the same way. What can be done for her?—Subscriber, Newman.

Ripe foxtail is awful stuff for an animal to have to eat, but it will get into the hay. Give a physic of one quart of raw linseed oil and three ounces of turpentine or give one pound of epsom salts, half a pound of common salt and two drams of powdered nux vomica. Dissolve all in two quarts of hot water and when cool give at one dose as a drench. It would be better to give both doses; giving the oil first and the salts a few days later.

Sick Pigs

I have some pigs nine weeks old that have a cough and their eyes are inflamed and mattery. Two have died and two more are quite sick. They were troubled with lice and I dipped them in a solution of kreso dip (75 to 1) which seemed to be too strong for them for their hides became hard and cracked. Have fed them on a diet of bran, potatoes, sugar beets and a small amount of sauerkraut. All food but the bran has been thoroughly cooked. They eat very little, seem fat but do not grow at all. What can I do for them?—Subscriber, Marina.

Lice on pigs can be gotten rid of by making a weak solution of any of the sheep dips, as 1 to 200, and sprinkling it on them from a sprinkling can. Their sleeping place should also be well sprinkled with the solution. This should be repeated every day until the lice are all gone. By dipping them the solution is likely to get into the eyes and do harm. If they are allowed to dry off in the sun after dipping them it is likely to parch the skin. The eye trouble may be from the kreso solution getting into them

Continued on Page 295

CARRY TO THE LIMIT!

Good dairy cattle are going to be in demand at unprecedented prices in the near future, just as sure as today's sunset!

Yet conditions are such that here and there a breeder feels compelled to sell his herd now, even though he realizes the certainty of the greater demand and higher prices that are sure to come, and probably to come soon.

Fortune rests within the hand of the man who has in his possession a herd of high class dairy cattle not many months hence, and it behooves every dairy cattle owner to carry good cattle to the very uttermost capacity of his feed and labor this winter. Keep what you have and buy from the other fellow who sells now.

W. H. Ginn & Son have decided to dissolve the existing partnership and will sell their herd without reserve or limit at public auction. As most breeders know, Ginn & Son spared no expense in buying good foundation animals, and from them they have developed a choice herd now numbering over 90 head. Every one of these will be sold to the highest bidder, on their farm, one and one-half miles southwest of

Corcoran, California
Thursday, October 10, 1918

The cows in milk will speak for themselves on sale day, many of them fresh or heavy springers, making money now and capable of keeping up the pace. And besides being great producers they are regular breeders as the calves and young stock prove conclusively.

The heifer herd is especially attractive, including:

TWENTY-FOUR DAUGHTERS OF MERCY SIR PONDYKE, whose sire is one of the best sons of King of the Pontiacs, and whose dam is a 23 pound cow of sound breeding.

TWENTY FIVE DAUGHTERS OF ARALIA DE KOL PONTIAC SALAMBO, by a son of the former world's record cow Aralia De Kol, and out of one of the best daughters of King Mead of Riverside that has just finished a yearly record of 22,097.8 pounds milk and 950 pounds butter in one year.

ARALIA DE KOL PONTIAC SALAMBO will himself be sold, and besides his 25 daughters in the sale there are 34 cows and heifers in calf to him. His three nearest dams average 610.3 pounds milk and 30.26 pounds butter in seven days, 24,158.26 pounds milk and 1031.86 pounds butter in one year.

Every animal guaranteed to be a breeder, every animal tuberculin tested and sold subject to tuberculin retest, except a few of the older animals that will be sold exactly as represented at sale.

Catalog in preparation. Write for one.

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J. M. Henderson, Jr., President — C. L. Hughes, Sales Manager

Sacramento, California.

Auctioneer: Col. Ben. A. Rhoades, Los Angeles

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Production Butter Fat Everything Guaranteed

Prince Gelsche Walker Korndyke

(shown above)

and

King Korndyke Pontiac

(shown below)

renewed old acquaintances and made a host of new friends among those who visited them at their home during State Fair week.

Some good judges, who saw them and their sons and daughters for the first time, even went so far as to suggest that we have been entirely too modest in the claims we have made for them.

Our official test season will begin very soon, and we shall have something to report about the splendid young daughters of both of our herd sires. The fact that KING KORNDYKE PONTIAC is sired by King of the Pontiacs, the greatest sire of all time, and PRINCE GELSCHE WALKER KORNDYKE is by Prince Gelsche Walker, the greatest bull yet developed in California, gives us reason to expect really big things of their daughters.

Why not put a young son of one of these bulls at the head of your herd now? We have a few good ones on hand, and it will be dollars and cents in your pocket if you buy one now before our official testing starts this fall. We price these good young bulls moderately, and don't overlook the fact that we extend liberal terms if you wish.

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We Have Been Telling You

that PRINCE RIVERSIDE WALKER is siring a mighty fine lot of calves in our herd, and prospective buyers who have come to look at his young sons have agreed with us for we have sold right down to calves all the time.

Now we have some expert opinion on the young sons and daughters of "Prince," in the form of awards at the recent California State Fair in the hot competition of the younger classes. Sons and daughters of PRINCE RIVERSIDE WALKER were placed as follows by Judge Scribner:

First Junior Bull Calf.
Fifth Junior Bull Calf.
Reserve Junior Champion Bull.
Second Senior Heifer Calf.
Fifth Senior Heifer Calf.
Reserve Junior Champion Heifer.
First Prize Breeders Young Herd contained some of his daughters.
Second Prize Calf Herd.
First Prize Produce of Dam, won by his twin sons.

Hadn't you better consider one of his young sons to head your herd, securing a rare combination of breeding and type?

Our Entire Herd is Tuberculin Tested

P. S.—Our junior herd sire, King Korndyke Pontiac 20th, was a second in class at the State Fair to the bull that was again made grand chamipon.

Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

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Five of his seven nearest dams average:
Milk one year....24,089.88 pounds
Butter ..... 1,105.07 pounds

This butter average is equalled by only one other bull of service age in the world. Buy your next bull from

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Shorthorn herd headed by Count Glory 426982, grand champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

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Awards at the State Fair

Written for California Cultivator By C. L. Hughes

THE showing of registered Holsteins at this year's state fair proved to be unexpectedly good, in view of existing conditions which operate against the fitting of a show herd.

The outstanding feature of the show was the exhibit of Bridgford Company, Knightsen, largely due to the presence of their grand champion bull, King Segis Alcartra Prilly, and his get. Last year this bull was pronounced one of the greatest young bulls ever uncovered in a Western show ring, and the only further comment on him this year is that he has developed above his 1917 form, carrying a wonderful depth of body, fine handling qualities, and a vast amount of style. The way he is breeding on is more important than his own individuality, and in stiff classes his daughters won first and fourth in the senior heifer calf classes, and first and second in the junior heifer calf classes, the winner in this class, Miss Orpha Pontiac Prilly, winning the junior championship from a field of good ones. One of his sons won fourth in the senior bull calf class, and another second in the junior bull calf class. His get won first place in the calf herd class and first as get of sire, rounding out a show that brought great honors to this excellent young sire.

W. J. Higdon, Tulare, made his first appearance at California state fair with a herd of which any breeder might justly feel proud. The star attraction of his exhibit was of course the great King Korndyke Pontiac 20th, the $6500 son of Miss Valley Mead De Kol Walker and King Korndyke Pontiac. This bull has made a remarkable development since last December, and as he stands today he is not out of place in any show ring. He stood second only to the Bridgford bull that was later made grand champion, and made a splendid impression upon the ringside judges. The Higdon entries were dangerous contenders in every class in which they showed, Harry Redd having them up to the mark every minute. In the senior bull calf class both first and second places were won by Higdon entries, as were also the first and fourth places in the junior bull calf class, the first place calf in this class later being made reserve junior champion. Higdon's entries also won second on aged herd, first on breeders' young herd, second on calf herd, second on get of sire, and first on produce of dam. The produce of dam, get of sire, second and fifth senior heifer calf, first and fifth junior bull calf, reserve junior champion bull, and reserve junior champion heifer, were all sired by Higdon's senior herd sire Prince Riverside Walker, making a splendid showing for their sire. Higdon lost several hair line decisions, and his herd was a center of attraction during the entire nine days of the fair, rounding out the session by winning both first and second places in the butter fat contest in the mature cow class.

The J. B. Gibson Company, Williams, were contenders in all of the classes in which they entered, pulling down a good share of ribbons.

J. H. Harlan Company, Woodland, showed an attractive herd, including a number of daughters of King Mead of Riverside that were greatly admired by all who saw them.

R. L. Holmes, Modesto, made an excellent showing with a small number of animals. Holmes has made unusually good selections for his foundation stock and will be heard from not only in the show ring but in the official test lists as well.

H. E. Vogel, Fresno, sent up a choice herd that was severely handicapped by the hardships of the trip. These cattle were held in the railroad yards over 24 hours at Sacramento, on a hot day just preceding the opening of the fair and when unloaded showed plainly the effect of the circumstance. In spite of this great drawback however, they provided stiff competition on judging day.

Longheath Farm, Mason, Nevada, owned by H. J. Long, made its first showing at California state fair and created a decidedly favorable impression. This herd is under the management of George Wendt, well known in California, and he can always be depended upon to bring them before the judge in fit condition. Considering the fact that this herd has been established practically within the past two years the showing made was very successful. Of particular interest in the Longheath exhibit was their young herd sire, King Ormsby Canary Johanna, who is by the great Sir Pietertje Ormsby Mercedes and out of a three year old that made 34.40 pounds butter in seven days and 139.83 pounds in 30 days. He is full brother to Glen Canary De Kol, 951.05 pounds butter in 365 days, freshening at 24 months.

The man who made a 100 per cent killing in the show was J. D. Patterson, Patterson, who brought up just one animal, the bull King Segis Alcartra De Kol Pledge, who won first in the senior yearling class, junior championship, and reserve grand championship. This bull is a remarkably good individual, and appears to have the outcome that will make him a dangerous competitor in any company.

The Individual Classes

The class of aged bulls was limited to two entries, the Longheath bull Copa De Ora Katrina Nevada going to the top with Harlan's bull, Prince Butter Boy Walker in second place.

The class of two year old bulls brought out four entries, and first place went easily to King Segis Alcartra Prilly, who was later on made senior and grand champion. Second place went to Higdon's King Korndyke Pontiac 20th who was a very strong second in this class. Harlan took third position with Prince Gelsche Walker Paul, and Vogel fourth place with Crown Prince Segis 25th, a well proportioned bull that might have gone higher had he not showed evidences of the hard journey to the fair. The junior yearling bull class uncovered only two entries, Gibson's taking first place and the entry of Longheath Farm second.

The senior bull calf class provided the first real work for Judge Scribner, and first honors went to Higdon's entry Model Bonnie Fobes De Kol an outstanding youngster of great size and quality, with his half brother De Kol Spofford Pontiac, also owned by Higdon in second place. Third and fourth places went to Bridgford entries, while Holmes wound up in fifth place with a calf of pleasing type and as good handling quality as anything in the class.

In the junior bull calf class Higdon showed a pair of twins sired by Prince Riverside Walker, taking first and fifth places, the first prize calf afterward winning the reserve junior championship. Bridgford took second place with a Prilly calf, while Holmes took third place with a son of the senior Bridgford herd sire, and Harlan took fourth place with a son of Yolo Valdessa Hengerveld.

The aged cow class was hardly up to the standard of former years either in numbers or quality. The two top cows, one entered by Bridgford the other by Higdon, were neither one in good show form. The Bridgford cow had calved just before shipping and showed up with a considerably caked udder, while Higdon's cow dropped twin bulls the day before judging and showed up rather gaunt. The decision in this class was of the hair line variety, finally settling on the Bridgford cow mainly because of her superior size. The third prize cow, the Longheath entry, was the youngest cow in the class and in another year should be a hard cow to beat. She showed up especially well after the milking out ordered by the judge.

The three year old class brought out four good entries. The Bridgford heifer however was an outstanding winner. This heifer, Tora Pontiac of Vina, is still milking in her second year old form, having to her credit an official record above 25 pounds butter in seven days at the beginning of her lactation period. The Longheath heifer won second place on her superior capacity and her appearance after the class was milked out. Holmes' heifer claimed third place, and the Harlan entry fourth.

In the two year old class the Longheath entry took first place by a shade over Higdon's entry, while

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Vogel's entries took third and fifth places and Harlan's entry fourth.

Two entries made up the senior yearling heifer class of which Holmes' Rosa Burke won over the Gibson entry.

Bridgford and Higdon took all the money in the senior heifer calf class their entries winning the five places out of a strong class of ten. One of Bridgford's Prilly heifers took top honors by a scant margin from a daughter of Prince Riverside Walker in Higdon's herd. This second place heifer was so good that the judge later on made her reserve junior champion.

The junior heifer calf class brought out a beautiful bunch of babies, daughters of King Segis Alcartra Prilly taking three of the five moneys for Bridgford, the first prize heifer later on taking the junior championship. Holmes landed a good third with a daughter of Sir Aaggie De Kol Acme, while Longheath took fourth place.

In the group classes Bridgford and Higdon were the big winners, although Longheath Farm took down the blue in the aged herd with Higdon second. Higdon's entry won first in the breeders' young herd, Bridgford first and Higdon second on calf herd, Bridgford first and Higdon second on get of sire, Higdon first and Harlan second on produce of dam.

In the production classes Higdon made a clean sweep of the classes in which he had entries, winning first on cow with yearly record, and first and second against all breeds in the mature class of the three day butter fat contest.

Exhibitors: Bridgford Co., Knightsen; J. S. Gibson Co., Williams; J. H. Harlan Co., Woodland; W. J. Higdon, Tulare; R. L. Holmes, Modesto; Longheath Farm, Fallon, Nevada; J. D. Patterson, Patterson; H. E. Vogel, Fresno.

Awards

Bulls, three years old or over—, 1, Copa De Ora Katrina Nev., Longheath Farm; 2, Prince Butter Boy Walker, Harlan.

Bulls, two years and under three—, 1, King Segis Alcartra Prilly, Bridgford; 2, King Korndyke Pontiac 20th, Higdon; 3, Prince Gelsche Walker Paul, Harlan; 4, Crown Prince Segis 25th, Vogel.

Bulls, senior yearling—, 1, King Segis Alcartra De Kolpledge, Patterson; 2, Paul Colantha Geneso, Longheath Farm; 3, Prince Roma Korndyke Pontiac, Gibson; 4, Fidelia Prince Newtonia, Vogel.

Bulls, junior yearlings—, 1, Sigma Burke, Gibson; 2, King Ormsby Canary Johanna, Longheath Farm.

Senior bull calf—, 1, Model Bonnie Fobes De Kol, Higdon; 2, De Kol Spofford Pontiac, Higdon; 3, King Abbekerk Johanna Segis, Bridgford; 4, Segis Prilly Pontiac Netherland, Bridgford; 5, Chief Modesto Walker, Holmes.

Junior bull calf—, 1, Unnamed, Higdon; 2, Segis Prilly Woodbine Pontiac, Bridgford; 3, King Segis Alcartra, Holmes; 4, Unnamed, Harlan; 5, Unnamed, Higdon.

Cows, four years or over—, 1, Bell Faskic Hengerveld De Kol 2nd, Bridgford; 2, Model Bonnie Echo, Higdon; 3, Colantha Ormsby Muchacha, Longheath Farm; 4, Senorita Ciruela Mechthilde 3rd, Higdon.

Cows, three years and under four—, 1, Tora Pontiac of Vina, Bridgford; 2, La Polka Omaha Mabel De Kol, Longheath Farm; 3, Riverview Bracelet Brett, Holmes; 4, Nadgy Korndyke Mooie 2d, Harlan.

Cows, two years and under three—, 1, Canary Farolico Creamelle, Longheath Farm; 2, Queen Pontiac Burke Wayne, Higdon; 3, Margaret Aralia Burke, Vogel; 4, Salambo Korndyke 2d, Harlan; 5, Kathleen La Verne, Vogel.

Senior yearling heifer—, 1, Rosa Burke, Holmes; 2, Daisy Gladi Pontiac Burke, Gibson.

Junior yearling heifer—, 1, Pauline Artis Sadie Vale, Bridgford; 2, Modjeska Walker Crane, Harlan; 3, Flossie Butter Boy Walker, Longheath Farm; 4, Tritomia Hengerveld Walker, Higdon; 5, King Korndyke De Kol, Gibson.

Senior heifer calf—, 1, Empress Pontiac Prilly, Bridgford; 2, Blanche Midine Clothilde Walker, Higdon; 3, Miss Bracelet Fobes Korndyke, Higdon; 4, Bessie Veeman Alcartra Prilly, Bridgford; 5, Pearl Pet Walker, Higdon.

Junior heifer calf—, 1, Miss Orpha Pontiac Prilly, Bridgford; 2, Raphaella Pontiac Prilly, Bridgford; 3, Jane Creamelle De Kol Acme, Holmes; 4, Longheath Segis De Kol, Longheath Farm; 5, Miss Alcarta Pontiac Prilly, Bridgford.

Aged herd—, 1, Longheath Farm; 2, W. J. Higdon; 3, J. H. Harlan.

Breeder's young herd—, 1, Higdon.

Calf herd—, 1, Bridgford; 2, Higdon; 3, Gibson.

Get of sire—, 1, Get of King Segis Alcartra Prilly, Bridgford; 2, Get of Prince Riverside Walker, Higdon; 3, Get of King Mead of Riverside, Harlan; 4, Get of Prince Alcartra Korndyke, Gibson.

Produce of dam—, 1, Produce of Model Bonnie Echo, Higdon; 2, Produce of Nadgy Korndyke Mooie, Harlan.

Senior champion bull, King Segis Alcartra Prilly, Bridgford. Reserve senior champion bull, Copa de Oro Katrina Nevada, Longheath. Junior champion bull, King Segis Alcartra De Kolpledge, Patterson. Senior and grand champion cow, Belle Faskic Hengerveld De Kol, Bridgford. Reserve senior champion cow, Canary Farolico Creamelle, Longheath. Reserve grand champion cow, Tora Pontiac of Vina, Bridgford. Junior cham-

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A herd of fine individuals, strongly bred in the lines of great production as evidenced by both short and long time records, handled in a manner to produce sound, healthy breeding stock.

Prince Walker Cornucopia

Our junior herd sire, is sired by PRINCE GELSCHE WALKER, and out of a 34.14 pound granddaughter of the first 30 pound cow, Sadie Vale Concordia. He is the highest record son of Prince Gelsche Walker in service. We have for sale a few choice young bulls.

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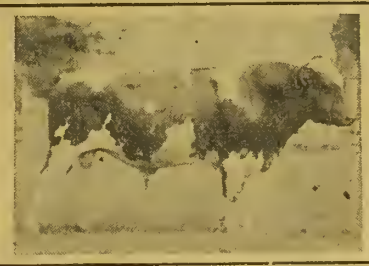

Prince Hiske Walker

He is by Prince Gelsche Walker and out of Hiske of Riverside, being therefore full brother to Lady Hiske Walker, 34.25 pounds butter in seven days as a junior four year old, former state record in class.

His offspring are uniformly straight, vigorous, and well marked. A few of his young sons for sale.

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pion cow or heifer, Miss Orpha Ponpion bull, King Segis Alcartra Prilly, Bridgford. Reserve grand champion bull, King Segis Alcartra De Kolpledge, Patterson. Reserve junior champion bull, Higdon junior calf. Grand champion cow or heifer, Belle Faskic Hengerveld De Kol, Bridgford. Reserve grand champion cow or heifer, Tora Pontiac of Vina, Bridgford.

SWINE

Nearly 200 head of Durocs, Polands and Berkshires were shown—and there never were so many high class shown anywhere in the West.

The judging of Durocs and Polands was done by Prof. L. A. Weaver of Missouri; Hampshires, Mulefoots and Chesters by Prof. J. I. Thompson of the University Farm, and Berkshires by J. L. Thatcher of Riverside.

Berkshires

Eleven exhibitors contended for honors. Prizes were very widely distributed and there was very keen interest in the judging of the Berkshire show. Both grand championships went to Glenn County.—W. S. G.

Berkshires

Exhibitors: Frank B. Anderson, Sacramento; F. A. Brush, Santa Rosa; W. M. Carruthers, Live Oak; Castleview Ranch, Owner J. Francis O'Conner, Santa Rosa; Homer Hewins, Calistoga; Elizabeth M. Holje, Calistoga; A. B. Humphrey, Escalon; Miller & Lux, Inc., Santa Rita Ranch, Dos Palos; James Mills Orchard Corp., Hamilton, Glenn County; H. L. & E. H. Murphy, Perkins; W. J. Sandercock, San Francisco; Joseph Wilson, Jr., Yerington, Nevada.

Boar, two years old or over—, 1, Ames Rival LXX, Mills Corp.; 2, Rominhood Laurel X, Wilson; 3, Winona Royal Champion V, Holje; 4, Winona Compton Champion VIII, Mills Corp.; 5, Winona Lee Champion VI, Sandercock.

Senior yearling boar—, 1, Live Oak Champion, Carruthers; 2, Rincon's Rival II, Brush; 3, G. W. F. Leader, Humphrey; 4, Rival's Rookwood, Brush; 5, Maplewood Leader, Holje.

Junior yearling boar—, 1, Rincon's Leader, Brush; 2, Grape Wild Emblem, Humphrey; 3, Wilsonia King Laurel, Murphy; 4, Supremoh, Hewins; 5, Columbia Leader, Anderson.

Senior boar pig—, Maplewoode Royal Prince, Holje; 2, Brighton Farm Rival, Carruthers; 3, Romford Standard, Hewins; 5, Grape Wild Royal, Humphrey.

Junior boar pig—, 1, Boar Pig, Humphrey; 2, Boar Pig, Mills Corp.; 3, Boar Pig, Wilson; 4, Boar Pig, Wilson; 5, Boar Pig, Brush.

Sow, two years old or over—, 1, Forest Grove Laurel VIII, Mills Corp.; 2, Leader's Invincibella, Humphrey; 3, Grand Lady Mayhews, Humphrey; 4, Forest Grove Duchess IX, Mills Corp.; 5, Leader's Artful Belle III, Holje.

Senior yearling sow—, 1, Grape Wild Rose, Humphrey; 2, Mayfield Laurel XV, Brush; 3, Rival's Lady Lee XLII, Brush;.

Junior yearling sow—, 1, Live Oak Laurel, Carruthers; 2, Escalon Emblem Belle, Humphrey; 3, Patricia L., Sandercock; 4, Escalon Peggy, Humphrey; 5, Patricia L., Sandercock.

Senior sow pig—, 1, Escalon Blue Belle, Humphrey; 2, Royal Polly II, Humphrey; 3, Live Oak Belle, Carruthers; 4, Rookwood Lady Double, Brush; 5, Rookwood Lady Double 2nd, Brush.

Junior sow pig—, 1, Sow Pig, Humphrey; 2, Sow Pig, Humphrey; 3, Sow Pig, Brush; 4, Sow Pig, Wilson; 5, Sow Pig, Wilson.

Herd, over one year—, 1, Mills Corp.; 2, Humphrey; 3, Brush.

Herd, under one year—, 1, Humphrey; 2, Carruthers; 3, Brush.

Herd, bred by exhibitor—, 1, Carruthers; 2, Brush; 3, Humphrey.

Get of sire—, 1, get of Grand Leader II, Humphrey; 2, get of Ames Rival C, Carruthers; 3, get of Royal Superbus, Humphrey.

Produce of dam—, 1, produce of Riverview Rose III, Humphrey; 2, produce of Escalon Bourbon Belle II, Humphrey; 3, produce of Silberfa Birch VI, Wilson.

Fat barrows, any age—, 1, Humphrey; 2, Brush; 3, Brush.

Barrows, pen of three, any age—, 1, Brush; 2, Humphrey.

Senior champion boar, Ames Rival 70th, Mills Corp. Reserve senior champion boar, Live Oak Champion, Carruthers. Junior champion boar, Maplewoode Royal Prince 3rd, Holje. Reserve junior champion boar, boar pig, Humphrey. Senior champion sow, Forest Grove Laurel 7th, Mills Corp. Reserve senior champion sow, Grape Wild Rose, Humphrey. Junior champion sow, Escalon Blue Belle, Humphrey. Reserve junior champion sow, Humphrey's pig. Grand champion hoar, Ames Rival 70th, Mills Corp. Reserve grand champion boar, Live Oak Champion, Carruthers. Grand champion sow, Forest Grove Laurel 7th, Mills Corp.

Duroc-Jerseys

The Duroc-Jersey show was large, and the pleasing feature of the show this year was that many of the best animals shown were bred by California breeders. Glenn County had 99 head—nearly half of the show—, and the Slocums of Williams won three championships.

Prof. Weaver of Missouri placed the awards.—W. S. G.

Exhibitors: L. J. Belknap, San Jose; W. V. Bennett, Nord; J. A. Borge, Los Banos; C. D. Bright, Glenn; J. M. De Vilbiss, Patterson; Leslie Dixson, Hughson; V. F. Dolcini, Davis; F. W. Gardiner, Sacramento; C. R. Hedges & J. H. McMartin, Glenn; W. F. Hollingshead & Son, Orland; Frederick M. Johnson, Napa; Elmer Lamb, Ceres; Wm. H. Manis, Willows; J. H. Minto, Patterson; Perkins & Co., Sacramento; Maurice Rucker, Sacramento; Chester W. Scott, Glenn; C. W. Smith, Willows; H. P. Slocum, Willows; J. E. Thorp, Lockeford; E. J. Weldon, Sacramento; R. Q. Wickham, Eldridge; Conejo Ranch, Newbury Park; A. Pontius, East Nicolas.

Boar, two years old or over—, 1, Councillor, Conejo Ranch; 2, Uneeda Wonder, Slocum & Son; 3, Orion Professor, Pontius; 4, Wavie Professor, Pontius; 5, Tommy Tucker, Gardiner.

Senior yearling boar—, 1, Pathfinder's Pride, Conejo Ranch; 2, Brookwater Regulator, Thorp.

Junior yearling boar—, 1, California's Great Wonder, Conejo Ranch; 2, Californio Orion King, Johnson; 3, W. B.'s Model I, Dolcini; 4, Uneeda Model Col, Slocum & Son; 5, Uneeda Golden Wonder I, Scott.

Senior boar pig—, 1, Uneeda Model Col III, Slocum & Son; 2, Model Lad, Conejo Ranch; 3, Tip Top Cherry, Lamb; 4, Duroc Model, Conejo Ranch; 5, Red Light, Conejo Ranch.

Junior boar pig—, 1, June Acres Crimson Col., Dolcini; 2, June Acres Crimson Model, Dolcini; 3, Freddie You'll Do, Thorp; 4, Boar Pig, Slocum & Son; 5, Johnson's Defender Jr., Johnson; 6, Cherry Lady's Defender, Johnson; 7, Uneeda Elberta Wonder II, Manis; 8, Mr. You'll Do, Thorp.

Sows, two years old or over—, 1, Enchantress, Conejo Ranch; 2, Dev's Crimson III, Minto; 3, Model Lady II, Hedges & McMartin; 4, Model Lena, Slocum & Son; 5, Arabella, Conejo Ranch.

Senior yearling sows—, 1, Model Lady, Conejo Ranch; 2, Uneeda Colonette Again, Slocum & Son; 3, Western Lady, Conejo Ranch; 4, Western Princess, Conejo Ranch; 5, Rucker's Effort, De Villbiss.

Junior yearling sows—, 1, Uneeda Queen Model, Slocum; 2, Critic Rose, Conejo Ranch; 3, Delight of Mossdale, Thorp; 4, Model Queen I, Dolcini; 5, Sunshine Girl, Conejo Ranch.

Senior sow pig—, 1, Mary Jane Pathfinder, De Vilbiss; 2, Model's Bess, Conejo Ranch; 3, Eleanor's Model, Lamb; 4, Model Elizabeth Bettie, Lamb; 5, Model Helen of Ceres, Lamb.

Junior sow pigs—, 1, Miss You'll Do, Thorp; 2, Miss June Acres Model, Dolcini; 3, Uneeda H. A. Queen I, Slocum; 4, Uneeda Daisy, Scott; 5, Real Orion Lady, Weldon; 6, Belle's Golden Model, Bright; 7, Uneeda Queen of Orion, Slocum; 8, Uneeda Lady, Scott.

Herd, over one year—, 1, Conejo; 2, Dolcini; 3, Slocum.

Duroc-Jersey herd, under one year—, 1, Slocum; 2, Dolcini; 3, Thorp.

Herd, bred by exhibitor—, 1, Dolcini; 2, Slocum; 3, Thorp.

Get of sire—, 1, get of Golden Model XXXI, Conejo; 2, get of Critic D., Conejo; 3, get of King's Col, Slocum.

Produce of dam—1, produce of Model Lady, Slocum; 2, produce of H. S. Crimson IV, Dolcini; 3, produce of Brookwater Lass II, Thorp.

Fat barrows, any age—, 1, Thorp; 2-3, Slocum.

Pen of barrows—, 1, Slocum.

Grand champion boar, California's Great Wonder, Conejo Ranch. Grand champion sow, Uneeda Queen Model, Slocum. Reserve grand champion boar, Councilor, Conejo. Reserve grand champion sow, Model Lady, Conejo. Senior champion boar, California's Great Wonder, Conejo. Senior champion sow, Uneeda Queen Model, Slocum. Reserve senior champion boar, Councilor, Conejo. Reserve senior champion sow, Model Lady, Conejo. Junior champion boar, Uneeda Model Col III, Slocum. Junior champion sow, Mary Jane Pathfinder, De Vilbiss. Reserve junior champion boar, June Acres Crimson Col., Dolcini. Reserve junior champion sow, Miss You'll Do, Thorp.

Chester Whites

Three herds contended for Chester White honors.

Two events were discussed considerably among the hog fraternity; one the selling of the grand champion boar Highlander for $1000 to Lea Bleakmore of Lakeport; the other the winning of championship on the sow Wonder Bernice, shown by young Hendern last year in the pig club classes.—W. S. G.

Exhibitors: Hiram Hendern, Fair Oaks; Highland Stock Farm, Fair Oaks; N. H. Locke Co., Lockeford; Mrs. L. M. Yore, East Auburn.

Boar, two years or over—, 1, Lockeford Prince, Locke.

Junior yearling boar—, 1, Highlander, Highland Stock Farm.

Junior boar pig—, 1, Hendern; 2, Hendern; 3, Yore.

Sow, two years or over—, 1, Yore; 2 (draw), Ester, Yore and Gem Topaz, Highland Stock Farm.

Senior yearling sow—, 1, Wonder Bernice, Hendern.

Senior pig sow—, 1, Yore.

Junior pig sow—, 1, Sow pig, Hendern; 2, Mollo O., Yore; 3, Colleen Bawn, Yore; 4, Chrystal, Yore; 5, Sow pig, Highland Stock Farm.

Senior champion boar, Highlander, Highland Stock Farm. Junior champion boar, Forest Prince, Yore. Reserve junior champion boar, Pig owned by Hendern. Senior champion sow, Wonder Bernice, Hendern. Reserve senior champion sow, Ester, Yore. Junior champion sow, Unnamed pig. Reserve junior champion sow, Myra, Yore. Grand champion hoar, Highlander, Highland Stock Farm. Reserve grand champion boar, Forest Prince, Yore. Grand champion sow, Wonder Bernice, Hendern. Reserve grand champion sow, Unnamed pig.

Herd under one year—, 1, Yore.

Herd bred by exhibitor—, 1, Yore.

Get of sire—, 1, Get of Royal Billiken, Hendern; 2, Get of Teddy, Yore.

Produce of dam—, 1, Produce of Won-

der Bernice, Hendern; 2, Produce of Ester, Yore.
Chester White special, Yore.

Hampshires

A few years ago in riding through farming districts in California one would see very few Hampshires—the hogs with a white band around the middle. Now, especially in Southern California, they are becoming more popular.

Three herds made a splendid showing at the state fair this year; Denker had a particularly fine pen of barrows.

The classes were judged by Professor Thompson.—W. S. G.

Exhibitors: Roy Dawson, Gardena; L. A. Denker, Saugus; Conejo Ranch, Newbury Park.
Boar, two years or over—, 1, Oro, Dawson; 2, Conejo Chief, Conejo Ranch.
Senior yearling—, 1, Dukes Allen, Conejo Ranch.
Junior yearling—, 1, Maloy's Controller, Denker; 2, Authority, Conejo Ranch; 3, Zodiac Wonder, Denker.
Senior pig—, 1, Leading Chief, Conejo Ranch; 2, Direct Kid, Denker.
Junior pig—, 1, Direct Junior, Denker; 2, Tip Top, Denker; 3, Amboy, Dawson; 4, Gay Allen, Conejo Ranch; 5, Malloy's Pride, Denker.
Sows two years old or over—, 1, Mary Pickford, Conejo Ranch; 2, Leading Wave 2nd, Conejo Ranch; 3, Leading Wave 3rd, Conejo Ranch; 4, Leading Wave, Conejo Ranch; 5, Elmyra 2nd, Conejo Ranch.
Senior yearling—, 1, Perfect Quality, Conejo Ranch; 2, Wavelet, Conejo Ranch; 3, Wavelet 2nd, Conejo Ranch.
Junior yearling—, 1, Little Mesa, Denker; 2, Senorita, Conejo Ranch; 3, Patt's Delight, Conejo Ranch; 4, May Queen, Conejo Ranch; 5, Superba, Conejo Ranch.
Senior pig—, 1, Chief's Wave 3rd, Cone Ranch; 2, Chief's Wave 2nd, Conejo Ranch; 3, Dearie, Denker; 4, Chief's Wave, Conejo Ranch.
Junior pig—, 1, Do-Do, Denker; 2, Spirea, Denker; 3, Menomie, Denker; 4, Allen's Idol, Conejo Ranch; 5, Bouquet, Denker.
Senior champion boar, Oro, Dawson. Reserve senior champion boar, Dukes Allen, Conejo Ranch. Junior champion boar, Direct Junior, Denker. Reserve junior champion boar, Leading Chief, Conejo Ranch. Senior champion sow, Perfect Quality, Conejo Ranch. Reserve senior champion sow, Little Mesa, Denker. Junior champion sow, Wade III, Conejo Ranch. Reserve junior champion sow, Do-Do, Denker. Grand champion boar, Direct Junior, Denker. Reserve grand champion boar, Oro, Dawson.
Grand champion sow, Perfect Quality.
Reserve grand champion sow, Chief's Wave 3rd.
Aged herd—1, Conejo Ranch; 2, Denker; 3, Conejo Ranch.
Young herd—, 1, Denker; 2, Conejo Ranch; 3, Dawson.
Herd, bred by exhibitors—, 1, Conejo Ranch; 2, Denker; 3, Conejo Ranch.
Get of sire—, 1, Get of Conejo Chief; 2, Get of Director, Denker; 3, Get of Director, Denker; 4, Get of Patt's Controller, Conejo Ranch.
Produce of dam—, 1, Produce of Japonica, Denker; 2, Produce of Blue Grass Queen, Conejo Ranch; 3, Produce of Leading Wave 4th.
Fat barrows—, 1, Conejo Ranch; 2-3, Denker Ranch.
Pen barrows—, 1, Denker; 2, Conejo.

Poland-China

Exhibitors: A. L. Bassett, Hanford; M. Bassett, Hanford; Geo. V. Beckman, Lodi; Clara H. Bernstein, Hanford; John M. Bernstein, Hanford; J. H. Cook, Paradise; Dimmick Bros., Lemoore; Fred Gatewood, Fresno; W. L. Haag & Son, Hanford; J. H. Hansbrough, Modesto; R. W. Jickling, Elmira; J. F. Lehman, Lodi; H. I. Marsh, Modesto; J. W. Wakefield, Acampo; Young & Clark, Lodi; Eugene Miner, Lodi.

Boars, two years old or over—, 1, I. B. A. Wonder, Marsh; 2, Orange King, M. Bassett; 3, Bob Price, Jickling; 4, Ursus Jr., Miner.
Senior yearling boar—, 1, Big Bone Bob, Young & Clark; 2, Model Wonder, Dimmick Bros.
Junior yearling boars—, 1, King's Big Bone Leader, Chas. Gatewood & Son; 2, Glen Chief, Jr., Hansbrough; 3, Young Jumbo, Haag & Son; 4, Golden State King, Young & Clark; 5, Matchless Big Bob of U. F., Beckman & Sons.
Senior boar pig—, 1, Big Model Fellow, A. L. Bassett; 2, Big Major, Marsh; 3, Forest View Bob, Cook; 4, Big Bone Model, M. Bassett; 5, Hadley's Major, C. H. Bernstein.
Junior boar pig—, 1, Long Big Bone, Jr., Young & Clark; 2, Bonito Model, M. Bassett; 3, Model Fellow, Jr., M. Bassett; 4, Unnamed, Hansbrough; 5, I. Am Bob, Lehman; 6, Long Big Bob, Young & Clark; 7, Big Korver II, Young & Clark; 8, Model Boy, M. Bassett.
Sows, two years old or over—, 1, Big Knox Girl, Marsh; 2, King's Wonder Giantess, Marsh; 3, Stella Hunter, Dimmick Bros.; 4, Queenie Big Bone, Cook; 5, Lora B., Haag & Son.
Senior yearling sows—, 1, Mollie Giantess, Miner; 3, Cali Belle, M. Bassett; 3, Long Model, A. L. Bassett; 4, Model Daughter, Marsh; 5, Model Lady, Marsh.
Junior yearling sows—, 1, Smooth Beauty, Young & Clark; 2, Timm's Wonder Maid, Young & Clark; 3, Wonder's Giantess, Marsh; 4, Lady Longfellow, M. Bassett; 5, Model Picture, M. Bassett.
Senior sow pigs—, 1, Big Model Maid, A. L. Bassett; 2, Big Model Lady, M. Bassett; 3, Forest View Bess, Cook; 4, Forest View Queen, Cook; 5, Major's Beauty, Marsh.
Junior sow pigs—, 1, Black Beauty V, Young & Clark; 2, Bobetta, Lehman; 3, Forest View Anna, Cook; 4, Unnamed, Hansbrough; 5, Carrie Hadley, J. M. Bernstein.
Herd, over one year—1, Marsh; 2, M. Bassett; 3, Haag & Son.
Herd, under one year—, 1, A. L. Bassett; 2, Marsh; 3, A. L. Bassett.
Herd, bred by exhibitor—, 1, A. L. Bassett; 2, Marsh; 3, Beckson & Sons.
Futurity litter—1, Young & Clark; 2, Lehman; 3, A. L. Bassett; 4, M. Bassett; 5, Beckman & Son; 6, H. Marsh; 7, J. M. Bernstein; 8, Miner.
Get of sire—, 1, M. Bassett; 2, get of I. B. A. Wonder, Marsh; 3, get of Big Bone Bob, Young & Clark.
Produce of dam—1, A. L. Bassett; 2, produce of Margaret Pandora Wonder, Young & Clark; 3, produce of Lady Price XII, Lehman.
Fat barrows—, 1, Miller & Lux; 2, Miller & Lux; 3, Miller & Lux.
Pen of barrows—, 1, Miller & Lux.

Mule Foot

All awards to H. Bailey, Lodi.
Grand champion boar, King's Big Bone Leader, Gatewod & Son. Grand champion sow, Smooth Beauty, Young & Clark. Reserve grand champion boar, I. B. A. Wonder, Marsh. Reserve grand champion sow, Big Knox Girl, Marsh. Senior champion boar, King's Big Bone Leader, Gatewood & Son. Senior champion sow, Smooth Beauty, Young & Clark. Reserve senior champion boar, I. B. A. Wonder, Marsh. Reserve senior champion sow, Big Knox Girl, Marsh. Junior champion boar, Long Big Bone, Young & Clark. Junior champion sow, Black Beauty V, Clark & Young. Reserve junior champ boar, Big Model Fellow, A. L. Bassett. Reserve junior champion sow, Big Model Maid, A. L. Bassett.

Cornwell's Kind of Heifers

At right, Anoakia Diotime Korndyke, the $1350 heifer. In center, Ciruela Walker, the first daughter of Prince Hiske Walker to freshen.

THE LINE DRAWN

Pat was celebrating and he had imbibed too freely. He punched another man in the face and got haled up before the court. The judge told him he was charged with striking a man. "Shure, yer honor, can't a man have a bit of fun?" asked Pat.

"Yes," said the judge, "but your right to have fun ended where this man's nose began." — Boston Transcript.

The Kind of Bull that Pays

Here is a Real Bull for someone

Hiske Senorita 232084

Born March 9, 1917. He is mostly white in color, a fine straight individual, ready for service.
His sire: PRINCE HISKE WALKER, who is by Prince Gelsche Walker and out of Hiske of Riverside, 711.57 pounds butter in one year, who is by Juliana King of Riverside. He is full brother to Lady Hiske Walker, 34.25 pounds butter in seven days as a junior four year old, state record in class when made.
His dam: SENORITA CIRUELA MECHTHILDE 3D, 707.31 pounds butter in one year as a senior three year old. She has seven day records of 25.78 pounds butter from 535.2 pounds milk. She is a big, strong, light colored cow of great dairy capacity. She was fourth in class at this year's California State Fair, and won the butter fat contest over all breeds.
Put HISKE SENORITA at the head of your herd if you want type, production, high per cent of butter fat, and light color. Write for price or come and see him for yourself.

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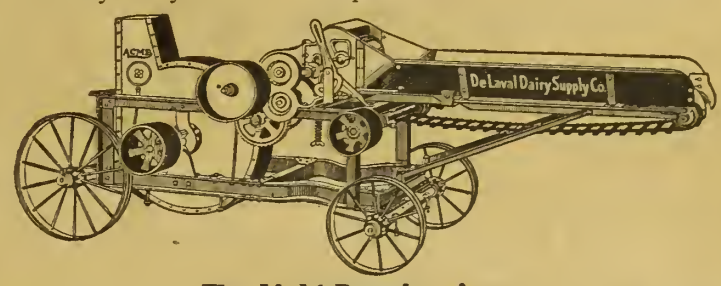

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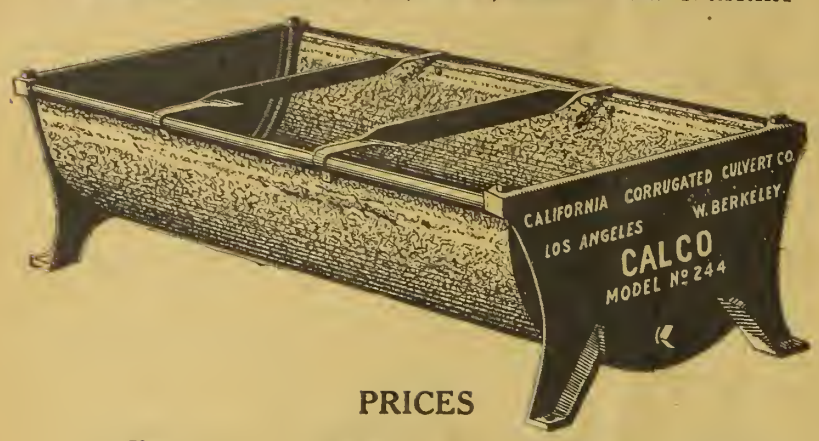

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10¼ inch	5 5-16 inch	60 inch	4.50
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10 inch	7 3-16 inch	60 inch	6.55
10 inch	7 3-16 inch	120 inch	9.60

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Northern California Livestock Notes

Written for California Cultivator By W. S. Guilford

SHORTHORN BREEDERS BANQUET

ONE of the most delightful events of state fair week was the banquet of the California Shorthorn Breeders' Association. President A. W. Foster presided—and was particularly happy in his remarks in introducing the speakers.

Prof. G. H. True urged the breeding of better animals on the farms and ranges. He believes that now is a good time to weed out many poor ones and keep fewer of the best.

John Robbins, the Shorthorn judge, said the exhibit at Sacramento compared favorably with that at the Illinois state fair which he judged this year.

Other speakers were C. N. Hawkins of Hollister, W. S. Guilford of Butte City, Prof. F. W. Wilson of Nevada, C. J. Dibblee of Santa Barbara, and Secretary D. J. Stollery of San Francisco.

WESTERN BERKSHIRE CONGRESS BANQUET

About 60 Berkshire breeders attended a splendid banquet at the Travellers Hotel, Sacramento, September 4. President Carruthers presided, James Mills was toastmaster. Among the speakers were A. B. Humphrey, Frank B. Anderson, Judge Peter Shields, J. L. Thatcher, Prof. J. I. Thompson and Prof. Weaver. The latter expressed himself as very much pleased with the quality of the Berkshires shown.

SHEEP PROSPECTS

Vice President Edward Bishop of the American Shropshire Association, predicts prosperous times for sheepmen for some years to come.

Mr. Bishop is of the firm of Bishop Bros. of San Francisco and San Ramon, large cattle and sheep raisers and owners of one of the best flocks of registered Shropshires in the West.

He reports that seven registered Shropshire ewes dropped 17 lambs one night. One had four, two more had triplets; the rest singles.

Mr. Bishop is of the opinion that there will be a big increase in the number of small flocks of sheep kept in California.

THE "CLOSE TO NATURE" HOG

It has been learned that protein and minerals must be added to corn and other grains for best results in hog feeding, that exercise is important and pasture very necessary.

A great many hogs in the Middle West are kept confined in houses and yards and fed highly concentrated feed like corn during a considerable part of the year.

This confinement, lack of range and exercise and variety of feed is an unnatural environment for a hog.

Those who have had best success with hogs in the East are those who have had their farms fenced hog tight and who have "hogged off" at least a part of the grain crops. "Hogging off" corn or grain simply consists of turning a bunch of hogs in a field of grain and letting them harvest the crop.

A great many hogs in California are grown on a "close to nature" system. On the big grain ranches and many fruit ranches, hogs are a by-product proposition. The brood sows "rustle for themselves" during a great part of the year and, unless too closely inbred and too badly treated, are vigorous and healthy and prolific. Most growers use registered boars and change every year.

These hogs get an abundance of exercise and a very wide variety of food. This ranges from green grasses, grains and weeds of all kinds to mature grain and waste fruit. They are able to "root" at will and get some tubers and other roots. Somewhere in their rounds they are able to get charcoal from burned stubble or grain or from fires made of other waste material. The salt given other stock is generally available, and the occasional death of a mule or cow provides rich animal food at times.

And where they "sort of" look after themselves in this way a hog always has a clean bed. Only by close confinement can a hog be forced to be filthy as regards its habits.

These "close to nature" hogs make money because they are largely fed on things that would otherwise go to waste.

WHAT PIG CLUB BOYS DO

"They are the finest hogs we ever had on the farm. The boys have convinced their dad that there is something in registered live stock, and you can be sure that it will not be long before every hog on the ranch will be a registered animal."

The speaker was a proud father of two "pig club" boys. The pigs had been bought at a nominal price from a public spirited breeder by the farm adviser who had turned them over to these high school boys. The understanding when the pigs were bought was that they would not need to be registered.

Now the boys and their father want to register the pigs. Which brings up a subject that has been discussed considerably by breeders of pure bred stock.

What charge should be made for registering these pigs?

Much can be said of the value registration papers would add to them — and it is, of course, "up to" the breeder as to what he will charge for them.

This is what the breeder in question has done. He has registered the pigs in the names of their young owners, paid the fees himself and made the boys a present of the papers.

The one thing he is more interested in than any other is the popularizing of the breed in this section, and he is delighted to have such a fine object lesson as these pigs afford. They have been worth a great deal to the breed and will continue to be worth more.

The work being done by the pig clubs is of great value to the swine industry. Good registered hogs have gone to thousands of farms that would never have been reached in any other way.

SOMETHING FOR BEGINNERS TO REMEMBER

Every year a good many people engage in the breeding of registered live stock. They buy a few—or many animals—from one or many sources. These animals are shipped to their new home and find new conditions, different feeds, strange quarters, new caretakers.

If the animals are shipped a great distance the breeding qualities of some of them may be impaired for months, perhaps forever.

These things naturally lead to disappointment, and many breeding enterprises are abandoned while they are in the development stage.

For in most cases, if the business is continued until the animals "come to themselves" and become accustomed to the new condition, everything turns out all right.

It would be a good thing if those who are starting flocks and herds could be impressed with the fact that the second year and not the first is the one from which results are to be judged.

Now there maybe some who, when reading the foregoing, will say; "Well, if one is to look for trouble and disappointment when buying registered animals, it will be best to keep scrubs."

This is far from the impression it is intended to convey. The same things that are apt to happen to pure bred animals are apt to happen to scrubs if they are moved from one place to another.

Ship in a registered sow from a distance, say 100 or 1000 miles. All conditions are different. She may have been badly shaken up on the trip. she may or may not do as well with her first litter as some scrub sow raised on the place. If she does not, do not judge her until after she has her next litter.

From one shipment of Shorthorns to Butte City Ranch from the East, we lost three calves and one cow. One calf was injured; two evidently had pneumonia. The cow had not been used to woodland pasture and broke a

Do This For Your Hogs

Provide a wallow close to the feeding grounds to which add Dr. Hess Dip and Disinfectant. The **DIP** will kill the lice and cleanse the skin, and as the hogs pass back and forth from the wallow to the feed trough, the **DRIP** will destroy the disease germs and the worms that pollute the ground. That will mean a clean, healthy skin, freedom from lice, a safeguard against disease and larger, better porkers. Also sprinkle freely about poultry houses, pens and stables to destroy germs and avoid contagious diseases. An excellent disinfectant for the home.

Dr. HESS & CLARK
Ashland Ohio

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Show Herd won highest honors in 1917.
Visitors welcome — information cheerfully given.

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Ranch at Owensmouth
City Office: 1219 Brockman Bldg., Los Angeles
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100,000 feet New and Second-hand Pipe and Casing.
Pipe—½, ¾, 1, 1¼, 2, 2½, 3, 3½, 4, 4½, 5, 6, 7, 8, 9, 10, 11, 12, 15 inch.
Casing—3, 3¼, 3½, 4, 4¼, 4½, 5, 5½, 6, 8, 10, 11, 12, 14 inch; 2000 feet 6⅝-inch 20-lb. tom thread.
Riveted Pipe—4, 6, 8, 10, 12, 14, 15, 18 inch.
All above pipe and casing is practically as good as new, with good threads and couplings on each joint. We also carry valves and fittings, pumps, engines, boilers and rail. See our stock and get prices before buying elsewhere.

ADAMS PIPE WORKS
Bay and Matee Sts., Los Angeles, Cal.
Phones: F 1917; Bdwy. 1264.

Ventura County fair to be held October 2-5 promises the greatest event of that kind in the county.

leg in some brush. These losses represent considerable money and are disheartening, but now the cattle all know the pastures and the brush does not bother them and we have not lost a calf from any cause this season.

The way to lose is to quit. Stay with it and everything comes out all right.

SECOND CROP CORN

The practice of planting corn or beans after a crop of grain has been harvested has been common in the irrigated sections of the Sacramento Valley for some time—but more of it is being done each year. L. A. Nichols of Butte City has a field of fine corn on land that produced a good crop of barley. "It is very necessary to work the land and plant the crop just as soon as possible after the irrigation. If it is delayed a few days too long the moisture will be down too low and the seed will not germinate," says Mr. Nichols.

MORE ANTI-HOG CHOLERA SERUM BEING USED

More anti-hog cholera serum was manufactured last year than in any previous year, despite a decrease in the amount of hog cholera. The increased demand for anti-hog cholera serum is ascribed to the greater value of hogs, with the consequent greater loss when one dies, and to the fact that hog raisers are becoming more appreciative of the value of using serum manufactured under federal supervision.

Department of agriculture officials warn hog raisers against the indiscriminate use of medicines or proprietary preparations other than serums, as experience has shown that nothing except serum, properly prepared and administered, is effective. Medicines other than serums, according to department officials, are worse than useless, because they not only fail to cure or prevent disease, but allow the loss of the animals they are advertised to save, thus taking money from the farmer and meat from the nation's supply.

A CORN CRIB PROCLAMATION

To All Anti-American Rats:

Be not discouraged by the almost rat cuteness of these Americans in building their cornhouses on little piers with curved slippery sheet-metal over the caps just under the floor joists. We find that these men soon forget what they have learned, and fall back into weak, careless customs.

This fall, when you begin to return from the fields to your winter homes, hopefully look to see if some man has not left a ladder conveniently leaning against the door, or—what is just as good—has used the shelter of the building to make a pile of farm tools reaching from the ground high enough up for you to climb within jumping-reach of the cracks in the floor.

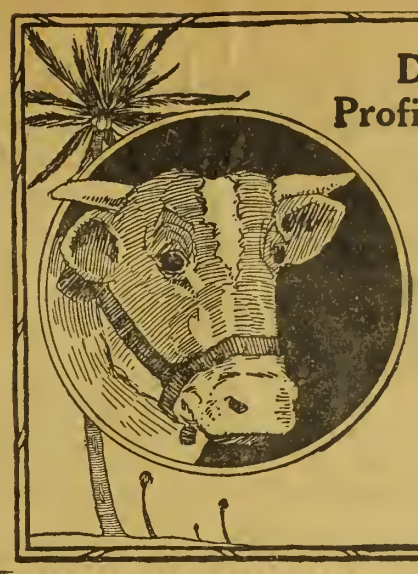
Once inside, you need not worry about these stairways being taken off. —Wilhelm.

SOUTHERN CALIFORNIA FAIR

War time agricultural development and live stock raising will be the keynotes of the coming Southern California fair to be staged at Riverside, October 8-12. With official government exhibits being sent to Riverside from Washington, national recognition by national live stock associations, exhibits from foreign countries and state and national governments the scope of the fair will be broader than any ever staged in the southland before.

Everything in connection with the fair will be of a patriotic nature. The naval band from the submarine base at San Pedro will furnish music one day at the fair. The soldiers of March field, the government aviation base, will present drills and battle representations. The aviators will present thrills in the air before the grand stand. Premiums will be paid in Liberty bonds, thrift stamps or cash prizes depending on which the exhibitors desire. People, men, women, boys and girls, everywhere are invited to enter something at Riverside for the attractive prizes. Send for a prize list.

Farmer's short courses will be given at the Davis university farm September 30 to November 8.



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THE Eclipse Wood Windmill keeps your tank full of water at the smallest possible cost. Farmers using it have proven this. Eclipse Mills are still pumping water today without repair costs after

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As good as the best and better than the rest. A boar or a sow pig sired by my great herd boar Director, and out of one of my choice sows will add prestige to your herd. I am booking orders now for the pigs of March and April farrow. Write now and place your order.

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Boquet Canyon Saugus, Cal.

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WHETHER .22 repeater for the boy or autoloading shotgun for yourself, a high power autoloading rifle for that well earned deer hunt or a pump gun or rifle for general use, buy a Remington UMC and know you are getting the *right* arm.

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The wonderful Wetproof process used exclusively in the manufacture of Remington UMC Smokeless "Arrow" and "Nitro Club" Shotshells, produces a shell which can be exposed to wet for hours without harm.

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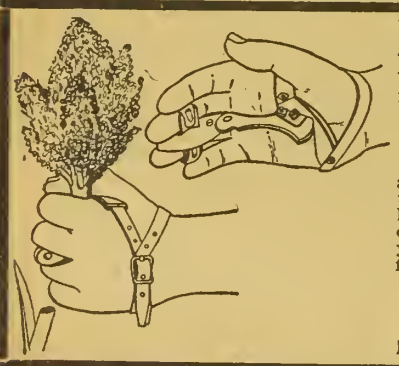

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as with any other instrument. You cut off the stalk and hold the head with the same hand — and you keep both hands at work, cutting as fast as you can open and shut your fingers. Pair (right and left) $2.50, from your dealer.

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It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards six times they will not be affected by .mildew or red spiders.

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Try our new brand of VENTILATED Sublimed Sulphur, 100 per cent pure, for making Paste—Atomic Sulphur and for dry dusting.

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This is in fine mechanical condition, and on account of its large Phosphoric and Potash content, is a very suitable fertilizer for this season of the year.
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LOS ANGELES

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Some Interesting Figures

Written for California Cultivator By Jean A. Koethen

FIGURES don't lie, neither do they tell the whole truth. The fact is, they must always be taken with due regard for circumstances. If circumstances are so far in the background that they cannot be visualized, a fig for your figures. All this is merely in deprecation of any attempt to attach undue importance to the following figures from the report of Helen Dow Whitaker, director of the All-Northwest laying contest at Pullman, Washington, which began November 1, 1917, and is not yet quite finished. Part of Mrs. Whitaker's figures are for the month of July, 1918, and part for the nine months beginning November 1 and ending July 31.

There were 110 entries in this contest, some of them being pens of five hens and some pens of six. There is nothing in the report to indicate how many hens were in any given pen, but the presumption is that most pens contain but five, pens of six being the exception. It seems quite likely also from the reports that the majority of the hens entered were white Leghorns, but no figures are given. For instance, in the list of pens having the highest sales value of eggs for the nine months, 14 of the 20 pens listed are pens of Leghorns, 3 are Rhode Island Whites, and there are one each of Barred Rock, R. I. Red and Minorca. As these pens represent but one-sixth the total number entered, we can only guess what proportion of the remainder may have been Leghorns. We know, however, from other lists, that there were pens of Orpingtons, Buff Leghorns and Wyandottes, none of which appear at all on this honor roll.

In the above mentioned list of pens having highest sales value of eggs, it is significant that the first pen was a pen not of Leghorns but of Barred Rocks from Oregon agricultural college. The eggs laid by these five or six hens were worth $35.56 for the nine months. Next comes a pen of Washington Leghorns with $35.46 to its credit, and third is a pen of Rhode Island Whites which netted $35.14. Then comes another pen of Leghorns and another of Rhode Island Whites, and farther down the list are another pen of R. I. Whites, one of Reds and one of Minorcas. All the rest are Leghorns. In a similar honor roll of hens with highest sales value of eggs, a White Leghorn leads, but second place is taken by a Rhode Island White. The roll of 20 pens, with value of eggs ranging from $8.71 the highest, to $7.32, the lowest, consists of 13 Leghorns, four R. I. Whites, two R. I. Red and one Minorca.

If we were to go by these figures, with nothing else to guide us, we should be forced to conclude that Rhode Island Whites are the best layers of all the heavy breeds, but common sense tells us these were probably a few exceptional birds, and a study of the names of entrants shows that three of the hens in the roll of honor were entered by one breeder, H. J. Kingsbury of Twin Falls, Idaho. The leading pen, however, belonged to a British Columbia man. Turning to the list of hens laying the highest number of eggs in the nine months, we find a White Leghorn first with 236 eggs, and one of Mr. Kingsbury's R. I. Whites second with 220 eggs.

This honor roll of hens laying over 200 eggs in nine months is interesting. Next following the R. I. White come three Leghorns, with 215, 215 and 211 eggs respectively, then a Minorca and a Rhode Island White, with 210 eggs apiece, then two Leghorns, 208 eggs each, and a R. I. with 207 eggs. Farther down the list, with 204 eggs to her credit, is the Barred Rock from Oregon agricultural college which was the best layer in the pen having highest value of eggs. The reason, no doubt, for Barred Rocks leading in this one respect is that, being winter layers, they laid more eggs during the period of highest prices than did the Leghorns.

In considering which is the most profitable hen to keep, we must not lose sight of cost of feed. Our data for this in the report of Mrs. Whitaker is rather meager, for the summary of feed cost and egg production is given only for the month of July. From it we learn that the Leghorns in this month consumed two and a half pounds less of feed than the Barred Rocks, which were the heaviest feeders of all; that the order in which the different breeds stood with respect to food consumed was: White Leghorn (least), Buff Leghorns, Wyandottes, R. I. Reds, Minorcas, Orpingtons, Barred Rocks, R. I. Whites, White Rocks. The Leghorns laid more eggs and ate less, and their feed cost less. The feed cost per dozen eggs was as follows: White Leghorns, 17.8 cents; R. I. Whites, 22.6; Minorcas, 23.5; White Rocks, 26.6; R. I. Reds, 26.8; Wyandottes, 27.5; Barred Rocks, 27.6; Buff Leghorns, 33.4; Orpingtons, 34.6. The return above feed cost for the average fowl of each breed was: Leghorns, 40 cents; R. I. Whites, 32.4; Minorcas, 26.9; White Rocks, 22.6; Barred Rocks, 19.4; R. I. Reds, 18.6; Wyandottes, 16.7; Buff Leghorns, 7.9; Orpingtons, 7.2. But there is a notable difference between the average fowl of each breed and the best fowl. The best Leghorn gave a return above food cost of 71.9 cents; the best Barred Rock, 60.7; the best R. I. Red, 57.8, and the best R. I. White, 53.1 cents. This, remember, is for one month, and that not one of the best months. The lesson from these figures seems to be that it pays to keep the best, and the best is within reach of all of us. A friend who owns but two Barred Rock hens, and those of no special quality, told me a few days ago that one of them, according to a carefully kept record, had laid 204 eggs since the beginning of the year and was still laying. Probably if we kept similar records we should find in our little backyard flocks many hens nearly up to the average of the All-Northwest layers. But if we keep no record, we are as likely to breed from the worst layer as from the best.

Are there any other conclusions to be drawn from these contest records? This would seem most obvious, that for producing most eggs at least expense the Leghorns has all other breeds beaten to a frazzle. Other breeds are better for meat; others serve better for the dual purpose of eggs and meat; but for profitable egg production the little White Leghorn is the bird to bank on. Oddly enough, the Buff Leghorns made almost the poorest showing of all. For both eggs and meat, nothing has yet equalled the American breeds, Rocks, Reds and Wyandottes, and an occasional individual in these breeds is as good a producer as the average Leghorn.

Eggs all through the MOULT!
SHORTEN the moult and lengthen the laying. Globe A-1 Mash (dry buttermilk added) will do it. The live lactic acid bacilli in the dry buttermilk will keep your flock in glowing health: (bulletin 162 U. S. Agr. Exp. Sta., Berkeley).
For Hogs A-1 Hog Feed 10% dry buttermilk) will save from $6 to $12 on fattening each hog.
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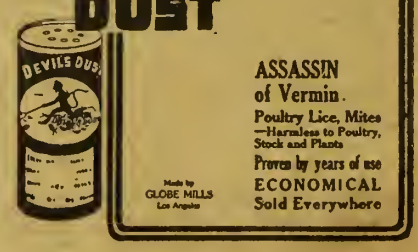

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400 acre stock and grain ranch 3 miles Pleasant Valley R. R. station, Mariposa County, California; 100 acres cleared and tillable, nearly all of the 400 acres could be farmed if cleared of the large oak and other trees, wood sells for $12 per cord at station, 3 and 6 room house, large barn, and out buildings, black smith shop and tools, ranch fenced and cross fenced, part hog tight, hogs never have cholera here, family orchard and garden irrigated from springs. Average rainfall 29.88 inches; grapes, olives, almonds, etc., grow without irrigation, feed in pastures and free outside range adjoining knee high, elevation 1500, no alkali or hard pan, ½ mile school and church, $30 per acre including 300 goats, 3 horses, 3 head cattle, turkeys and chickens and all farm implements. $3000 cash, balance long time 7 per cent. Fred B. Palmer, owner, Coulterville, California.

20 acres deep silt land, joining good town on the South; 10 a. alfalfa, 10 a. grain; 300 feet to railroad station. Plenty of water for irrigating. Soft water piped on place. Price right. Chas. McNeely, Alpaugh, California.

Finest Olive Land in state; also fine for peaches and berries. Under irrigation; ditch on property. 19 acres, for quick sale $500; half cash, balance terms. H. H. Shuffleton, Jr., Redding, California.

For Sale—Coachella Valley fig and date ranch. Best fruit proposition in Southern California. Bears fruit from May to January and brings top prices. A. L. Wood, Indio, California.

Be Patriotic, Raise Stock on productive government land, plainly marked on county sectional maps. $2.50 ANY county. Booklet, particulars for stamps. Write Joseph Clark, Sacramento.

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Go into Business for Yourself — Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

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Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

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RANCH TOOLS — Single 2, 3, 4, gang disc and moldboards; plows, fine shape; 30 spike tooth harrows, some new; 4 Killefer cultivators; 4 horse power gear, $40; brand new John Deere alfalfa cultivator, cost $120 new, our price $85; double 32-disc harrow, $78, cost $200. Not everything, but everything we advertise.
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All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.
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For Sale, Holt Caterpillar Model 18. Has been entirely rebuilt by the Holt Mfg. Co. For information or demonstration phone owner, G. F. Blackwood, Glendora, or Holt Mfg. Co., Los Angeles. Might take good team as part payment but nothing else.

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GRAPE WILD FARMS
A few fall boars left by Royal Superbus—also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
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Mule Foot Hogs, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California, "The Blue Gums."

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Fine big smoothe Poland-China boars and gilts $20.00. Registered and crated f. o. b. Live Oak, California. A. J. Stohlman.

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White Leghorn Baby Chix from heavy laying (Hoganized) stock. $14.00 per 100. We guarantee safe arrival. The Pioneer Hatchery, 409 Sixth St., Petaluma, California.

Fall Chicks — Book order now for your future meat and egg supply. Write for special circular on fall chicks. Stubbe Poultry Ranch and Hatchery, Palo Alto, California.

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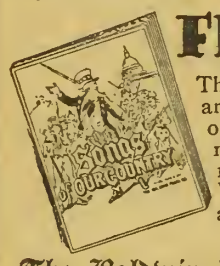

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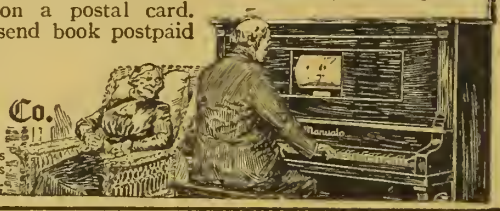

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Household Department

HOW TO FORGET

If you were busy being kind,
Before you knew it you would find
You'd soon forget to think 'twas true
That someone was unkind to you.

If you were busy being glad,
And cheering people who were sad,
Although your heart might ache a bit,
You'd soon forget to notice it.

If you were busy being true
To what you know you ought to do,
You'd be so busy you'd forget
The blunders of the folks you've met.

If you were busy being right,
You'd find yourself too busy quite
To criticize your neighbor long,
Because he's busy being wrong.

—Rebecca Forseman.

A LUMP OF ICE

Written for California Cultivator
By Ida M. Blake

ALL day she sits huddled in the doorway, with outstretched hand, a pathetic figure, yet hardly anyone sees her there.

Her face is seamed and wrinkled, and bronzed with the sun of many summers, yes, and winters too, for she sits at the old post year in, year out. Her cheeks are hollow; her mouth drawn tight, and her eyes sunken like two deep wells of water.

In the morning, you can see her crawl slowly down the hill, keeping close to the high buildings, as though seeking their protection from even the gentle breeze that might chance to blow against her poor weak body. Her rounded back and shoulders hoop over like a letter "C", and, as a playful breeze skips around the corner, she draws the black shawl closer around her head and body and crouches down in her accustomed corner. A deep sigh escapes her as she stretches out her hand to passersby, and so they day begins.

It is a busy street where she is sitting—in the heart of a busy city. People are passing back and forth, here and yon, all day. Rich and poor, crippled and strong, old and young, go by in an endless procession, yet still the beggar sits, with empty, outstretched hand. Morning passes to noon, and as the hot summer sun of this semi-tropical city creeps higher, it begins to shine on the poor, black, old lady, and she sighs again.

"Not a centesimo this morning, and what will Tony do to me tonight. He was so mean and cross last night because I brought home only two dimes and a few pennies. Oh if Tony could only get some work and keep it. Time and again the big man comes after him and takes him away and locks him up. Then when he comes home again, he swears he will be good, and get steady work. But the very first night, when he goes by "Terrys", something seems to draw him in that door, he says, and then he spends all he has earned, and comes home to my Nannette, oh so ugly. If the big man would only do as he said he would, and shut the doors of Terry's place and put Terry behind the bars awhile, then Tony would be all right. Because Tony is good, and he loves my Nannette when he is himself, but oh, he beats her and swears at her when he comes home from Terry's place. And now, tonight if I go home empty-handed, I'm afraid, oh I'm so afraid."

And a tear rolled out of the poor old lady's eye, and coursed its way down her wrinkled cheek.

Just then a gruff voice said, "Hello Grandma, pretty hot today, hey, here's a piece of ice for ye.'"

The old lady looked up and saw standing by her side, an ice-man with outstretched hand, holding a piece of ice toward her. How good the dripping piece of crystal looked, for she was hot and her tongue and mouth were parched and dry. She took the piece of ice, and how her face beamed at the little act of kindness shown her, just when all life looked so black. The ice-man grinned and walked away, unconscious of the good he had done. There were many passers-by who saw the incident, and several were touched by it, so that after going past, two men put their hands into their pockets, drew out half a dollar apiece, went back to the old lady and dropped the coins into the outstretched hand.

A little child went by with its mother, and seeing the old lady, asked if she might give her a flower she was carrying. The mother had seen the incident also, so let the child do as she wished.

The old lady's cup of happiness was filled to overflowing that day, and truly it was just a little lump of ice from the big-hearted, though gruff appearing ice-man, that was the means of such happiness.

BAKU

One of the most picturesque and interest intriguing feats of the war — doubtless because we know so little of the country and circumstances and so much of the fiber of the Englishmen who have carried it through—is the taking of Baku, the great Russian oil center in the Caspian Sea.

The briefest of dispatches in the newspapers have announced a march of British forces from Bagdad across Persia to the shores of the Caspian and their seizing of the rich Baku fields—ahead of the Germans.

Of what happened since we have heard nothing—it is all a part of the history yet hid behind the veil of censorship. Meanwhile here is a little description of Baku and its history, taken from the National Geographic, which will be of particular interest:

The National Geographic Society issues the following war geography bulletin on Baku, Russia's great oil city, occupied recently by a British force: "The city of Baku, built in the form of an amphitheater on the south side of the Apsheron peninsula, which juts far out into the Caspian Sea, is the Tampico of the Slav empire. Two vast oil fields, containing more than 2700 wells, make it the chief oil center of Europe. Had the Teutonic powers succeeded in reaching it before the British forces occupied it, the blow would have been even more serious to the Allied cause than was the seizure of the Rumanian oil fields by the German army of occupation many months ago.

According to a census the year before the outbreak of the war, Baku was a city about the size of Oakland, California, Providence, Rhode Island, or Toledo, Ohio. It is the chief city of the Russian province of the same name, and is situated in the midst of an unattractive, treeless plain which stretches along the western shores of the Caspian. The Caspian is 84 feet below sea level, and Baku rises only 30 feet above the great inland sea, so that it is more than 50 feet below the ocean level. Many centuries ago the Persian fire worshipers discovered that the natural gases issuing from fissures in the rocks near Baku would burn, and there may be seen, a few miles from the city, the remains of one of their ancient temples. The city itself was in existence as early as the sixth century. It did not become a Russian possession until a little more than a hundred years ago. The upper part of the city, corresponding to the back rows of an amphitheater, is the picturesque Tartar quarter, with its many narrow lanes and Oriental ba-

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LOS ANGELES

zaars. A fifteenth century palace of the khans is in a very dilapidated condition, and has been used for many years by the Russians as a military magazine. The most characteristic structure in the town is the massive Kis Kale, or maidens' tower, which rises to a height of 147 feet and which is now used as a lighthouse. It dates from the Byzantine period. Four-fifths of all the oil produced in the Russian empire comes from the Baku fields. The high-water mark of production was reached 14 years ago, when the output of the district was nearly 10,000,000 tons of crude petroleum. In 1905, however, there was a disastrous fire which considerably curtailed production for a time. The latest authentic figures on production are those for 1915, when a little more than 7,000,000 tons were produced. Much of the output of the wells, which vary in depth from 500 to 2000 feet, is transported by pipe line to Batum, on the Black Sea, but is also connected by rail with this seaport as well as with Rostov-on-the-Don. The former city lies 560 miles to the west, by way of Tiflis, and the latter is 818 miles to the northwest. In addition to its oil interest, Baku has dry-docks, flour mills, sulphuric acid works and tobacco factories, while it is the chief entrepot for raw cotton, silk, fruits, dried fish, wines and rice produced in Persia and the Transcaucasus territory. The town derives its name from the squalls (badkube), which are frequently very violent on this part of the Caspian coast.

SALT DOWN THE SURPLUS

Where there is a big family to be fed through the winter and a rush of summer work, the surplus of vegetables might well be salted down. The process is exceedingly simple and the only equipment needed is good water-tight kegs. While salted vegetables may not equal fresh in quality, they help materially to build up the food reserves and, when they are well cooked and seasoned, the flavor, though different from that of fresh vegetables, is good. Vegetables put up as directed will keep their crispness and color.

Directions

Gather vegetables when in the best condition and pack while they are crisp and tender. Cover top with grape leaves, chard or horseradish.

Weight with a clean stone resting on an inverted plate. Do not allow molds to form, and keep vegetables covered with brine.

When all bubbling has ceased about a week after packing, cover the surface of the brine with cottonseed oil or melted paraffin. Store in a cool place and examine once or twice a week for a month.

For the brine allow 1 2/3 cups of salt to one gallon of water. This is a ten per cent salt solution.

For a salt-and-vinegar solution allow three-quarters cup vinegar to one gallon of above solution.

Peppers

Select medium large, plump, green peppers. Remove stem and enough of the tops to remove seeds. Follow directions above using the salt-and-vinegar solution. When taken from the brine, peppers should be firm, crisp, of good color, and spicy to astringent in taste.

Green Tomatoes

Salted green tomatoes may be made into tomato stew, stuffed tomatoes, breaded tomatoes, salad and pie or converted into mincemeat and chutney. Choose well developed green tomatoes and pack in salt solution. Green tomatoes packed in salt-and-vinegar solution are good for salads and relishes.

When taken from the brine the green tomatoes will be slightly discolored but firm and of good quality. Soak in cold water for two hours before using.

Ripe Tomatoes

Select medium sized ripe tomatoes free from cracks or bruises and pack in brine solution. Follow directions and your tomatoes will be firm and of good color when removed from either the brine or the salt-and-vinegar solution.

Ripe tomatoes preserved in the salt solution generally require soaking for two hours before being used. After this soaking the skins slip off easily, and the tomatoes can be used as though fresh. For soups or scalloped or casserole dishes, soaking for one hour is usually sufficient, for the excess salt seasons the other ingredients.

Ripe tomatoes preserved in the salt and vinegar solution require soaking for only about 30 minutes. When used in combination with fresh vegetables they need not be soaked at all. The skins slip off easily, and the flesh is firm. The color and the flavor of the tomatoes are practically no different from those of fresh tomatoes.

Recipes for using vegetables preserved in this way will be given next week or in an early issue.

SUGAR SUBSTITUTE

Mrs. D. C. Evinger, Selma

Here is a substitute for sugar that I find excellent in most any cooking.

Take good ripe grapes of most any kind and pull them off the stems then wash clean, put in a kettle and cook until soft then put in a sack of close texture and hang up so the juice will drain out. Mash the sack so you get all the juice then boil until thick on a slow fire and you will have a sweet syrup good as honey and not so high priced.

The seeds and pulp left in the drain sack can be mashed through a seive to remove seed. Then season with cinnamon and spice to taste and boil one-half hour and you have a good jam to spread on the bread.

THE "PIG-KNITTER".

In her knitting bag of satin
She had fifteen yards of tattin
And a scarf crocheted in white and baby blue.
She will work for endless hours
To embroider foolish flowers
In astonishing designs of varied hue.
She enjoys it so much better
Than the knitting of a sweater,
A helmet, or a beanie, or a sock;
She will knit some useless trifle,
But the man who packs a rifle,
If he counts on her, will get an awful shock.
She's a "pig-knitter."

—Frederick L. Wheeler.

WHAT DO YOU KNOW ABOUT PIANOS

Assuming that you can "tell a good tone," can you judge the hundred and one things which enter into the making of a Piano, the things which play their part in making and maintaining a good tone? Do you know the difference in plate and scale design? Are you familiar with the various "actions"? Are you a judge of the wood, the wire, the felt, the veneers and all the other materials which enter into the making of a Piano?

Probably not—not one person in a thousand possesses this expert knowledge. After all, when buying a Piano you depend greatly upon the expertness and the integrity of the Dealer or House. Let your greatest care be the selection of the Piano House. Tell that House what you would like and what you can afford and they will guide your selection of a Piano with expert judgment and a sincere desire to serve you well.

Beware of a "cheap piano"—in the end it is the most expensive. Avoid the alluring statements of some dealers—they are but pitfalls to catch the unwary. Protect yourself by going to a Piano House with a reputation for integrity and fair dealing—you will never regret it.

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While thousands of Styleplus suits will be sold, the big object is to show the public what values we can produce by centering our volume on a few grades, thus permitting us to manufacture scientifically at low cost.

This season when clothing prices are *up* you can buy a Styleplus at a price never considered unreasonable for a good suit of clothes. The Styleplus plan of supplying reliable quality at known price helps you more than ever in times like these.

Wear Styleplus Clothes and you march in Uncle Sam's great thrift army because you make both sides of your dollar count. Visit a Styleplus Store during the coming week.

Sold by one leading clothing merchant in most cities and towns. Write us (Dept. AB) for Styleplus booklet and name of local dealer.

HENRY SONNEBORN & CO., Inc. Founded 1849 Baltimore, Md.

Los Angeles Market

Los Angeles, September 18, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.
Cal. Extra Creamery 54
Dairy Exchange price past week on

Sept.	11	12	13	14	16	17
'18 ...	51	..	51	53	53	54

Rcts. wk. ending Sept. 17, 245,800 lbs.

CHEESE

Brokers' prices:
California fresh, lb. 28

EGGS

Exchange quotations. Price to retailers 2 to 3 cents higher.
Fresh extras 57
Case Count 54
Pullets 51
Dairy Exchange prices past week on fresh extras.

Sept.	11	12	13	14	16	17
'18 ...	55	..	55	57	57	57

Rcts. wk. ending Sept. 17, 450 cases.

POULTRY

We quote to producers.
Broilers 35
Fryers 31
Hens, small, 24@26; heavy 29
Colored 29
Ducks, lb., 20; ducklings .....22@25
Roasters 31
Roosters, old 20
Turkeys .....30@35
Geese 15
Belgian Hares 16
Squabs .....30@35

LIVESTOCK

We quote cwt. f. o. b. L. A.
Corrected Wednesday morning, September 18, by the Cudahy Company.
Cattle—
Beef steers, av. 1000-1100 lbs. 12.00
Heifers, good 9.00
Cows, good 8.50
Veal Calves 10.00
Canners .....5.00@6.00
Hogs—
Av. 150 lbs. 18.00
Av. 175-225 lbs 19.00
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers 11.50
Ewes 10.50
Lambs 15.50
Yearlings .....11.50@12.00

POTATOES

Wholesale selling prides:
Burbanks .....2.90@3.00
Sweet, lug .....1.00@1.10
White Rose, lug .....1.00@1.10

ONIONS

Wholesale selling price, cwt.
Australian Brown, cwt. .....2.25@2.40
White Globe .....2.35@2.50

VEGETABLES

Wholesale prices:
Beans—String .....5@6
Limas, lb. 6
Beets, sk. 2.00
Cabbage, cr. .....3.50@4.00
Carrots, doz. 40
Celery, cr. .....3.00@3.50
Corn, lug. .....90@1.00
Cucumbers, lug 65
Egg Plant, lb. .....3½@4
Horseradish, lb. 15
Lettuce, cr. .....80@85
Onions, green, doz. .....25@30
Peas, Tel., lb. .....13@14
Peppers, Chili, bx., 40@45; Bell, lug .40@50
Tomatoes, lug. .....60@65
Turnips, doz. 35
Watercress, doz. .....35@40

FRUITS

Wholesale prices:
Apples—King David 3.00
Gravenstein .....1.85@2.75
Maiden Blush 3.00
Bellefleurs, bx. .....1.85@2.00
Newtown Pippins .....1.35@1.65
Cantaloupes — Tip Tops best, 1.40@1.50; Paul Rose, 1.75; cabbage crates, Tip Tops and Pineapples, 3.25@3.50; White Rinds, 3.00@3.25; Casabas, 3.25@3.50.
Crabapples, lug .....1.35@1.40
Figs, lb. .....5@6
Grapes—Lb., Malagas, 3½; Muscats, 2@3; Liberty, 3; Tokays, 4@5; Cornichons, 5@6; best 4-basket crates, Concord, 1.25@1.35.
Nectarines, lb 5
Peaches—Home-growns, Curry Seedlings, 1.30@1.40 per lug; Salways, 1.25; Phillips Clings fy., 1.60; smaller low as 1.00@1.25 per lug box, loose 3@4 lb.
Pears—Bartletts, 2.75@3.00 per packed box. Home-growns, various varieties, lb., 3@4; Beaumont and Hemet Bartletts, loose, 4@5 lb.
Quinces, lb. .....2½@3½
Watermelons, lb. .....1½@2½

CITRUS

Lemons, packed, 4.75@5.00; loose 3.75@4.00
Oranges — Valencias .....7.75@8.50
Grapefruit .....3.50@4.00

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....18@20
Amber extracted 16
Fancy white comb, per case 6.50
Comb lt. amber, per case.....5.00@6.00
Beeswax, lb. .....32@34

BEANS

Price to retailers, cwt.:
Lady Washington 11.75
Navy 11.75
Pink 8.25
Tepary 8.00
Red Mex. 10.00
Lima 13.00
Blackeyes 8.00
Garbanzos 11.00
Cranberry 13.00
Soy 8.00
Lentils 21.00
Kidney 12.00
Henderson Bush Lima 11.00

HAY

Quotations by Nichols - Loomis Company. Prices to growers f. o. b. L. A.:
Tame Oat .....25.00@27.00
Volunteer Oat .....12.00@14.00
Wheat .....22.00@25.00
Barley .....22.00@25.00
Alfalfa .....18.00@21.00
Quotations furnished by California Alfalfa Growers' Association, Riverside, California.
No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS

See San Francisco market.

San Francisco Markets

San Francisco, September 17, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:
Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.
Dairy Exchange quotations, lb.:
Extras 58
Prime firsts 55
Prices Extras past week and year ago:

Sept.	10	11	12	13	14	16
'18 ...	55½	55½	..	56	57	58
'17 ...	..	42½	..	43½	45½	..

Rcts. wk. ending Sept. 16, 256,100 lbs.

CHEESE

Dairy Exchange quotations:
Cal. Flats .....29½@36½
Cal. Y. Am. 31
Ore. Y. Am. 30½
Jack Cheese, full cream 28

EGGS

Dairy Exchange quotations:
Extras 61½
Selected Pullets 57½
Prices Extras past week and year ago:

Sept.	10	11	12	13	14	16
'18 ...	64	63½	..	62	62	61½
'17 ...	..	45	..	46½	47	..

Rcts. wk. ending Sept. 16, 9749 cases.

POULTRY

We quote to producers, lb.:
Per lb.: Large hens, 35@36; Leghorn hens, 31@32; broilers and fryers, ¾ to 1½ lbs., 42@45; 1½ to 2 lbs., 36@38; 3 lbs. and over, 35@36; old roosters, 22@23.
Ducks, live, 27@30.
Geese, 23@24.
Belgian hares, live, 15-17.
Squabs, doz., 3.50@4.00.
Turkeys, live, 35@38.

LIVESTOCK

Prices gross weight:
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.
Steers, lb., 9@11½; thin, 7¼@8½; cows and heifers, 6@8; thin, 3½@5½; calves, 8@11.
Sheep—Per lb. gross weight; Unshorn wethers, 11@11½; ewes, 8½@9½; lambs, yearlings, 12@12½; milk, 12@14½.
Hogs—Hard grain fed, weighing 100 to 140 lbs., 17¾; 140 to 300 lbs., 18¼; 300 to 400 lbs., 17¾.

POTATOES

Wholesale selling prices at wharf, cwt.:
River, new, cwt. .....1.85@2.40
Sweets, lb. .....4@4¼

ONIONS

Wholesale selling price on wharf, cwt.:
Australian, Brown and Yellow..1.25@1.50
Garlic, new, lb. .....12½@15

VEGETABLES

Wholesale selling price:
Beans, String, lb. .....8@10
Limas, lb. .....6@7
Carrots, sk. .....75@85
Corn, green, sk. .....1.50@3.00
Cucumbers, lug .....1.50@1.75
Pickling, lb. .....3@4½
Egg Plant, lug .....65@75
Lettuce, doz. .....15@20
Okra, bx. 50
Onions, green, bx. .....65@75
Peppers, Bell, lug, 75@1.00; Chili.. 50@65
Pumpkins, sk. .....75@1.00
Squash — Summer, lug .....75@1.00
Cream .....75@1.00
Tomatoes, lug .....50@1.15

FRESH FRUITS

Apples — Gravenstein .....1.25@2.50
Bellefleur .....1.25@1.75
Bananas, lb. .....7@7½
Cantaloupes — Turlock ponies, 1.25@1.50; standard, 1.50@1.75; flats, 50@65; Persians, cr., 3 to 5, 75@90; Honey Dew, cr., 1.75@2.00.
Figs, bx. .....75@90

Get That Whiff?

These crispy mornings—how you will enjoy the fragrance of a steaming-hot cup of *Jevne's Coffee.*

Fill a cup with *Jevne's Coffee*—and drink. Its flavor will not only win your favor, but its fragrance will tempt you to another cup.

And, too, *Jevne's Coffee* is an agent of economy, for good coffee requires less sugar and cream to meet your taste requirements.

Be sure to say *"Jevne's Coffee"* to your grocer.

-sold Everywhere

H. JEVNE CO.

When writing advertisers, mention The Cultivator.

California Liberty Fair

Exposition Park Los Angeles

October 12 to 26, 1918

Products of the Farm and Orchard

Thousands of Exhibits

See the Harvest Home Festival of California's

Best Flower Show, Tractor Show, Food Show

Horse Racing Fireworks

Forest, Farm, Orchard and Meadow

From 1500 to 2500 Prize Animals on Exhibition

Greatest Live Stock Show Ever Held in West

See What the United States is Doing in this Great War

California Liberty Fair

October 12 to 26, 1918

Send For Premium List
Pico 3776

Headquarters Central Park
Hill St. between 5th and 6th

Honey Dew Melons, cr. .....1.50@1.75
Grapes—Per crate: Seedless, 75@1.00; Black Prince, 85@1.00; Tokay, 1.00@1.25; Muscat, 1.00@1.25; Cornichon, 1.00@1.25; Isabella, 1.00@1.25 per lug.
Nectarines, cr. .....50@1.00
Peaches, bx. .....1.00@1.50
Pears, Bartlett, bx. .....1 75@3.00
Plums, cr. .....1.25@1.50
Pomegranates, cr. .....50@75
Pineapples, doz. .....4.50@5.00
Quinces, lug .....1.00@1.50
Watermelons, lb. .....1@1¼

CITRUS

Lemons, bx. fy., 4.00@6.50; lemonettes, 2.50@4.00; Valencias, 7.00@8.50; grapefruit, 4.00@6.00.

ALMONDS

The Almond Growers' Association has established opening prices as follows per pound:
Nonp. 27½
I.X.L. 25½
Ne Plus 24½
Drake 20
Outside dealers have named prices above these quotations and it is understood association stock is practically closed out and prices withdrawn.

BEANS

Jobbers' prices, cwt., recleaned:
Limas .....13.10@13.25
Bayous .....7.50@7.75
Small Whites .....Nominal
Large Whites .....Nominal
Mexican Reds .....7.75@7.90
Blackeyes .....6.75@7.00
Pinks .....6.80@7.00
Red Kidney .....Nominal
Cranberry .....Nominal
Teparies .....7.50@8.00

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....17@20
Amber extracted 16
White comb, cs. .....4.50@6.00
Light amber comb, cs. .....3.50@4.00
Beeswax .....32@34

HAY

Under date of September 13, Scott, Magner & Miller says:

Receipts past week, 1331 tons. These receipts are light for this season, as usually during August and September we expect our largest receipts. Trade is very light and the only demand seems to be for fancy wheat hay.

There is a great deal of alfalfa yet on the rivers as well as in the interior districts, and as the central portion of California is having an abnormal rainstorm a great deal of this hay is sure to be materially damaged and no doubt will be shipped to this market to be disposed of. The market is in no condition at present to receive this damaged hay as it must be fed immediately and cannot be piled away damp. With the slight demand for hay in this city it is a problem what can or will be done with the hay that is damaged from the rains.

We beg to suggest to shippers of hay that they consult with their consignees before shipping to them as unless this is done the hay is liable to arrive on this market in such quantities that consignees will be unable to place it and serious trouble is bound to follow Heavy arrivals of alfalfa during the week have been difficult to place with the natural result that prices are easier.

A few cars of straw arrived but had to be handled by consignees.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market — for prices to consumers charges of cartage, commission and handling must be added according to conditions:
Fancy Wheat Hay (large 5 wire bale) .....26.00@27.00
No. 1 Wheat or Wheat and Oat Hay .....23.00@25.00
No. 2 Wheat or Wheat and Oat Hay .....20.00@22.00
Choice Tame Oat Hay .....24.00@26.00
Other Tame Oat Hay .....21.00@23.00
Wild Oat Hay .....19.00@23.00
Barley Hay .....19.00@23.00
Alfalfa, first cutting .....16.00@20.00
Alfalfa, second cutting .....22.00@24.00
Stock Hay .....18.00@21.00
No. 1 Barley Straw, bale .....50@80

GRAIN AND FEED STUFFS

Wheat—Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

	Per cental.
Hard white—	
No. 1	3.66⅔
No. 2	3.61⅔
No. 3	3.55
Soft white—	
No. 1	3.63⅔
No. 2	3.58 1-3
No. 3	3.51 2-3
Club and Sonora—	
No. 1	3.60
No. 2	3.55
No. 3	3.48½

For sacked grain add 9 cents per bushel of 60 pounds to above prices. Deduction of three-fourths of a pound is made for weight of standard grain bag. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to its merit.

Barley — No. 1 feed, 2.37½@2.45 per cental; milling, 2.55@2.60.

Oats — Red feed, 2.55@2.65 per cental for ordinary and 2.75@2.85 for choice; seed do, 2.90@3.10, with recleaned at 3.20 @3.40; black, 2.50@2.65 for feed and 3.00 @3.25 for seed; do, recleaned, 3.50@3.75.

SEEDS

Prices in round lots, lb.:
Millet, recleaned .....5@5½
Flax .....8@8½
Hemp .....5½@6
Rape .....2½@5

Citrus Fruit Market

Los Angeles, September 18, 1918.

Oranges are still commanding long prices, Valencias sometimes going to $11. This is for exceptionally fine stock in exceptionally fine markets.

Lemons on the contrary are lowest of the season. There is indication of slight improvement, however. There are at present practically 125,000 boxes of foreign lemons in sight.

Shipments

Shipments of citrus fruits to date since November 1, 1917: Southern California; oranges 13,597 cars, lemons 5435, total 19,032. To same date last season, oranges 38,084, lemons, 7415, total 45,499. Central California this season: oranges 2536, lemons 115, total 2651. Last season to same date; oranges 4665, lemons 164, total 4829. Northern California; oranges 203, last year same date 845.

PARTIAL LIST CALIFORNIA FRUIT AND VEGETABLE SHIPMENTS

From post card reports to the Los Angeles branch of the bureau of markets, report is made of the following shipment of cars of products from California for the week ending September 16: Apples, 136; berries, 5, beets, 2; cabbage, 6; cantaloupes, 15, casabas, 16; carrots, 4; dried apples, 1; dried apricots, 16; dried beans, 41; dried figs, 23; dried peaches, 28; dried potatoes, 1; dried prunes, 13; garlic, 2; grapes, 1619; lettuce, 19; mixed fruit, 15; mixed vegetables, 24; mixed fruit and vegetables, 41; mixed dried fruit, 3; onions, 92; peaches, 396; pears, 164; peppers, 6; plums, 2; potatoes, 206; quinces, 5; raisins, 114; strawberries, 14; tomatoes, 119; watermelons, 32; Arizona watermelons, 2; Arizona peaches, 1.

There is no deferred classification in food conservation. We are all in Class I; all in camp, and ready to go "over the top" when we must further conserve.

Not "Bit" but "Utmost"—the end is worth our "All."

VETERINARY

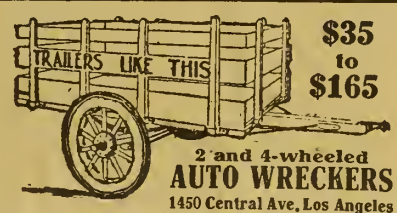
Continued from Page 283

or it may be a contagious disease that is seen occasionally at this time of the year. Keep them in a darkened place and sponge out the eyes with warm water that has a tablespoon of borax in each pint. For the parched skin rub them all over with olive oil or cocoanut oil. Coughing is one of the symptoms of hog cholera but is caused by other troubles also. Feed them some sour milk if you can get it. Your feed is not good enough. They must have some whole grain, rolled barley or corn meal.

WEATHER CONDITIONS

San Francisco, Cal., September 14, 1918.

Stations	Rainfall—Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	1.38	1.81	.57	64	52
Red Bluff	6.96	7.08	.16	90	56
Sacramento	3.48	3.48	.11	88	54
San Francisco	2.53	2.53	.01	80	56
San Jose	6.23	6.23	.11	80	50
Fresno	T	.01	.00	86	56
San Luis Obispo	.60	.61	.08	90	50
Los Angeles	.10	.22	.00	98	58
San Diego	.06	.17	.00	94	60



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1450 Central Ave, Los Angeles

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12-20

$1600 f.o.b. Los Angeles
F. T. Briles, S. Cal. Distributor
214-216 No. Los Angeles St., Los Angeles, Cal.
Branch House—110 Main St. Porterville, Cal.

Gardner's Bean Harvester
meets the requirements of the rancher and is within easy reach of all.
Ask your dealer about it, or send direct to factory.
Gardner Harvester Co.
900 E. Fourth St., Santa Ana, Cal.

Better service is assured by the advertiser if when writing you mention the California Cultivator.

Raynster for Protection

Raynster is the family name of a complete line of weatherproof coats. Raynsters include coats for men and women, girls and boys, in all kinds of materials, at a wide range of prices.

Heavy rubber-surfaced work coats; warm, ulster-like coats for cold and rainy weather; imported cloth coats that are worn as overcoats; light slip-ons; school coats for youngsters—all these bear the Raynster quality label. Look for this label—be sure it is in the raincoat you buy. It is your protection. It assures good materials and fine workmanship and the best value for your money.

Write to us for a Style Book with illustrations and descriptions of the different kinds of Raynsters.

United States Rubber Company
Clothing Division, New York and Boston

Raynster
Reg. U. S. Pat. Off.

ANNOUNCEMENT!

We, B. G. Doak and E. C. Doak, formerly owners of Standard Corrugated Pipe Co., wish to announce that we have formed a corporation known as the

Doak Tractor Company

For the distribution of Farm Tractors in California. We have done this after a thorough study of the tractor situation for the past year, having always in mind a tractor that would be the most PRACTICAL for this territory and which would give the greatest amount of EFFICIENCY. The INTERSTATE TRACTOR CO. of Waterloo, Iowa, knowing of our many years experience with conditions in California, invited us to take the California agency for their tractors. We welcomed their suggestions, but made no decision until we felt that we could recommend and conscientiously distribute a Tractor which is the best on the market and will give the greatest SERVICE and ECONOMY.

The New 1918 Plow-Man

13-30 and 15-30

Marks the Greatest Step in Reserve Power, Refinement of Construction and Finished Details

Correctly Designed
All Standard Parts
Motor, 4-cylinder (Oversize)
Controls, Rear drive type
Traction, Chassis on 4 wheels.
Transmission, unit with motor.
Cooling System, (Oversize) 8½ gal.
Front Axle, oscillating type.

Model 15-30 Pulls Four Plows
Model 13-30 Pulls Three Plows

Correctly Designed
All Standard Parts
8 Dry Discs.
Clutch multiple,
Buda Motor.
Bennett Carburetor.
Dixie High Tension Magneto.
Foote Strite Transmission.
Perfex Radiator.
Hyatt Bearings.
Turning Radius 15 feet.

Farmers have learned in the past few years that satisfactory work from a tractor demands EXCESS OF POWER. The machine rated at full capacity is overloaded, and therefore soon worn out. The only tractor of permanent value is that one combining HIGH QUALITY of CONSTRUCTION with plenty of reserve power—PLOW-MAN tractors are of simple construction, making it possible for a boy to handle them. In rating the horse-power of these tractors they have provided for a ONE-THIRD RESERVE POWER which means that under a normal load these tractors have a ONE-THIRD RESERVE POWER for all emergencies, and which assures a long life to the tractor. From an ECONOMY standpoint the PLOW-MAN is establishing some wonderful records in the States of Kansas, Iowa, Illinois and Nebraska.

Plow-Man Tractors
Have an Established Record for:
Smooth operation.
Easy handling.
Fuel economy.
Very low upkeep costs.
Long life of tractor.
A satisfied owner.

Live Agents Wanted

If PLOW-MAN TRACTORS are not represented in your territory here is your opportunity. Invite us to submit our proposition; it will interest you and our first carload of PLOW-MAN TRACTORS is here. We invite your inspection.

Service
We have installed a parts department with a full supply of PLOW-MAN parts which insures immediate service to the PLOW-MAN Owners. This is a feature which has been one of the drawbacks in the tractor business, and should be given serious consideration by the prospective buyer when about to make a purchase.

Doak Tractor Company, Inc.

50 8th Street, SAN FRANCICO, CAL.
Telephone—Market 4482

236 Marsh-Strong Building
LOS ANGELES, CAL. Telephone 10175

CA

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — September 28, 1918 — No. 13

A GREAT PORTION of the world is today free from bondage and enjoying its liberty because of the bondage the peoples of Belgium, Servia and Eastern France are enduring. The wonderful fight put up by those sturdy peoples gave the world a chance to gather itself and ward off the blow of the Hun.

It took America long to appreciate the fact that the world's liberties were endangered and that selfishness alone demanded more than passive watching. We are now taking and doing our part with characteristic American vim; are fighting with all our might. "We" means the two millions of our best men in the trenches and ninety-eight millions at home investing in bonds---not German but Liberty.

The boys are giving of their life's best---we are investing in the best security on earth. No man in our army or navy was ever asked to fire a shot for an unjust cause. No person has ever been asked to invest in U. S. bonds that are not worth 100 cents on the dollar plus.

There will be no lack and the millions will lend billions Over Here that the boys may win Over There. The more we buy, the fewer of them will die.

If we can't fight, our money and our food can.

Freemen buy bonds; Slaves wear them.

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877 Combined with California Cultivator 1914. Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916.

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C. B. Messenger, Editor.

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Ernest Braunton — D. F. Reichard
J. A. Koethen — J. B. Neff
J. W. Mills — Louis B. Stanton
Dr. Wm. Petrie

Live Stock: W. S. Guilford, C. L. Hughes, C. A. Briggs.

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Advertising rates furnished on application.

The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

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S. E. Leith, Fifth Avenue Building, New York
C. A. Cour, Globe Bldg., St. Louis, Mo.

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Saturday, Sept. 28, 1918

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

Can we add a word to the editorial on the cover of this issue? Perhaps we can; but we don't need to. Buy bonds.

GASOLINELESS SUNDAY

The country east of the Mississippi has had its trial of the gasolineless Sunday. Its observation was almost universal, and life was made miserable for those who failed to observe the regulations. No definite orders have been given as to observation of the day on the Pacific Coast, but presumably it is coming. Many auto owners are anticipating the need and saving on gas.

EXHIBIT AT THE FAIR

There are still some fairs to come. Everybody needs the inspiration of everybody else in this year of our greatest production. This not because we lack patriotism, but because we have it and we want to do our utmost. We need sweets. The farmer who has produced it in the form of honey, sorghum, sugar beets or any other product, should show of his best. We need acid fruits. The grower who is excelling should inspire the rest of us to equal his best. And so with cereals or other farm crops, especially home dried or canned products of all kinds.

TAX DEDUCTIBLE

The treasury department has reversed its former ruling that an irrigation tax payment is not deductible in making return for one's income tax. The department formerly held that irrigation taxes were levied for making improvements, and that improvements on real estate were a permanent investment and not an expense. Very often this is not the case, and the department has made most proper reversal, at least to the extent that "assessments paid under the laws of California are to be used in defraying interest and maintenance charges; but not to the extent that they are used to pay the cost of construction or the principal of bonds issued for that purpose."

SAVE THE CAST-OFFS

Winter is coming, and Belgians, Servians and many others in Europe will go cold. There has been no manufacture; shoes and clothing are practically all gone. No matter how badly worn our cast-off clothing is, it is wanted for shipment to Europe, or in case it is entirely beyond repair, if of wool, is shredded or manufactured into shoddy for the making of cloth to keep people warm. There are special organizations, but the Red Cross will handle and forward all such clothing. Do not clean or make repairs, as it is desired to give the people over there the employment which they need in making the clothing wearable. Save everything, even underwear, hosiery, badly worn sheets or cases, all muslin, worn towels, old curtains and especially wool in any form.

"Every day the great principles for which we are fighting take fresh hold upon our thoughts and purpose and make it clearer what the end must be and what we must do to achieve it. We know more certainly than we ever knew before why free men brought the great nation and government we love into existence, because it grows clearer and clearer what supreme service it is to be America's privilege to render to the world. The anniversary of the discovery of America must therefore have for us in this fateful year a peculiar and thrilling significance. We should make it a day of ardent rededication to the ideals upon which our government is founded, and by which our present heroic tasks are inspired.

"Now, therefore, I, Woodrow Wilson, president of the United States, do appoint Saturday, the twelfth day of October, 1918, as Liberty Day. On that day I request the citizens of every community of the United States, city, town and countryside, to celebrate the discovery of our country, in order to stimulate a generous response to the Fourth Liberty Loan. Commemorative addresses, pageants, harvest-home festivals, or other demonstrations should be arranged for in every neighborhood under the general direction of the secretary of the treasury and the immediate direction of the Liberty Loan Committee, in cooperation with the United States bureau of education or the public school authorities. Let the peoples' response to the Fourth Liberty Loan express the measure of their devotion to the ideals which have guided the country from its discovery until now, and of their determined purpose to defend them and guarantee their triumph."

WAR FINANCE

There has been formed at Washington the War Finance Corporation, the first activity of which has been the formation of cattle loan agencies. From the first circular regarding this agency we note that the corporation considers that the business of raising live stock is contributory to the prosecution of the war, and, in proper cases, is willing to give financial assistance where needed, preferably by lending to banks, trust companies, and other financial institutions which make loans on live stock. All banks have been advised by the federal reserve bank of their respective districts how this assistance may be obtained.

We have not heard of the activities of this association in this state, but from the above we take it any cattleman's banker can give him definite information regarding any Coast activity.

BEAT 'EM TO IT

These are Fourth Liberty Loan days. The whole United States is being organized into a fighting force which will give for this campaign the usual "over the top" return. Presumably everyone who reads these words has been included in this great working organization, but in any case, as we are all to subscribe, may we not beat the solicitor to it and have our subscription made on this, the first day of the campaign? As these words are written we have not yet been given the total amount of the loan nor the time at which the bonds mature, but the interest is 4¼ per cent; they are as good as gold; and the country needs the money.

The average for each man, woman and child is somewhat under $100, but of course great numbers of us must do vastly more than that. Let us give—as the boys in the trenches give—of our best and to the fullest limit.

NOT SO BAD

Reports from several fruit drying and other sections of the North indicate the injury is not so great as at first anticipated. The storm seemed to center in the Santa Clara Valley, where nearly six and a half inches fell. In that section prunes still on the trees were, many of them, dropped into the mud, and those on trays which could not be stacked because of lack of labor, began to soften or "grow" before the seven days' downpour was over. Vast quantities of table grapes have been softened and reduced from table grapes to wine grapes, but fortunately the wineries are paying exceptionally high prices. Much of the grain was still out, but owing to its being quickly spread and dried, it is now estimated that that particular loss may not exceed one per cent. The loss will reach many millions of dollars, but not so many as at first anticipated.

THE FARMER AND THE DRAFT

The war department has ruled that exemption boards are to consider farm labor requirements in order that necessary food production may be maintained. In this respect the department of agriculture writes:

"In the new draft the district boards are charged with the duty of putting into deferred classes those persons who are more likely to further the war by remaining in civilian occupations than by entering the army. Accordingly, three advisers are to be selected for each district board—one for agriculture, one for labor, and one for other occupations. The agricultural adviser will be appointed by the board upon the recommendation of the secretary of agriculture. The advisers are not members of the board but may, when invited, attend its meetings."

The duties of the advisers who will be appointed will be to place men where they can serve best to help win the war. These advisers will be able to help greatly the district boards to keep in agriculture the necessary workers. These workers, whatever may be their inclination to enter military service, should stand ready to serve in any capacity in which they can contribute most toward a speedy ending of the war. In order that this may be done a frank statement should, in each case, be made to the boards. It is believed that it will frequently require as much courage on the part of many men to remain in their civilian occupations as to waive deferment.

This Week's War Notes

The Fourth Liberty Loan drive begins today.

Answers to questionnaires by America's 13,000,000 registrants are flooding draft boards.

The House has adopted the Senate prohibition amendment by a vote of 124 to 37, and America will be dry after July 1, 1919.

Consul-General Poole, representing America in Moscow, and for whose safety there has been much concern, is now safely out of Russia in Finland.

This has been another Allies' week. There is activity on three fronts. Advances are being made in northern France and in Flanders; others in Macedonia and in Palestine.

In Palestine Gen. Allenby has surrounded and captured 25,000 Turkish troops, great quantities of stores, including 260 big guns, and practically crushed Turkish military activity. It is anticipated this will have great influence on Turkey and Bulgaria.

It is anticipated that men now training in Pacific Coast cantonments will soon go across to Vladivostock and aid in the Siberian campaign. The situation has materially cleared in Siberia. The Japanese cavalry has captured Blagovieshtchensk, and the Allies are proceeding slowly south from Archangel and with little hindrance.

The kaiser went to Metz to put some pep into his soldiers, and he said: "The Americans said that they would give Alsace-Lorraine to France. Efforts are now being made by the Americans to carry out that promise. I am sure, however, that you, together with my army, will give the enemy proper reply to such a daring enterprise."

The smash into Bulgaria has netted over 20,000 prisoners and 200 heavy guns and three armored trains to the English, Greeks and French. French cavalry is doing some especially effective work. The advance now totals over 60 miles, the last two days netting ten miles each day. Farther west on the line the Servian troops are doing most effective work. They have likewise advanced their line over 60 miles since September 15.

The Hindenburg line has been passed in several places, especially important advances being made around St. Quentin and Cambrai. The Germans are strengthening their lines by bringing up their big guns. American troops hold all of their gains in front of Metz. No further advance is reported, but lines are being strengthened and large guns brought up. American shells have already been dropped in forts surrounding the city. The French captured 10,000 Teutons near Laon late last week.

More Power---Fewer Men---More Food

WE IMAGINE that when Adam was growing apples he found that the loosening of the soil and the destruction of the weeds, which must have come after the fall, were aided by the use of a crooked stick. For hundreds, even thousands of years after that the crooked stick with various modifications was the principal agricultural implement. It is possible that Abraham and Isaac and Jacob followed somewhat improved methods, though they trusted their flocks to turn the herbs of the field into food and raiment for them. It is probable that when Ruth gleaning in the fields, followed Boaz, he had provided himself with a sickle, and that sickle was used by reapers for thousands of years or until within the memory of many of the readers of the California Cultivator. Many of us recall the swinging of the cradle and even the cleaning up of fence corners with the old-time sickle. To be sure, the reaper was invented by Cyrus McCormick in 1831, but the cradle still held its place on many of the smaller farms until into the sixties. "Main strength and awkwardness" has been the rule in the production of the world's food until within a very few years. Today we are saying, "Let gas do it." And the rapidity with which we are improving upon power farming methods is astounding.

This was never shown more fully than at the great tractor demonstration just held in Los Angeles: Great in that there were perhaps 150,000 people attending; there were 120 tractors demonstrating the efficiency and economy of power farming; there were many hundreds of farm implements built especially for tractor farming; there were demonstrations of educational methods which make for more efficient work and greater production; one firm alone had in excess of $30,000 worth of farm implements on the ground. It was an event patriotic to the last degree, and every moment found something doing from the first on the opening morning until long after dark of the last day.

It was of course a time for doing business, or rather a great trade mart, in which the sales force of 60 tractor manufacturers and hundreds of implement manufacturers sold thousands of dollars worth of power and power farming implements. One firm alone took orders in the aggregate requiring well up towards five figures to express.

But these direct sales and the fact that some sales were made of machinery and implements to go to other lands is of lesser importance than the educational value of this demonstration. We believe the one lesson most strongly driven home was the education of the attendants in the necessity for the use of power and power implements. The labor shortage is so acute that the farmer is in a mental attitude to grasp to the fullest the lessons of such demonstration, and besides the tractor user was aided in securing greater power from less oil and less gas.

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The Governor of California Spoke

An indoor snapshot taken during address of Governor Stephens. The governor was proud to be present at this, one of the greatest expositions of its kind. Such a demonstration adds to the real value of every California acre.

This Is Not a Sewing Machine

Young onions for transplanting in the Crawford planter are first placed in a "tape" or gummed between strips of tough paper. When a reel of this tape long enough to reach across the field is secured it is removed and placed in the planter. This machine is one of the most ingenious labor savers yet brought out.

William D. Stephens, governor of California, in center. O. H. Stevens president of the association at right.

Left to right: J. F. Griswold and W. L. Dixon, the firm of Dixon & Griswold, implement dealers, Los Angeles.

The Holt Company's demonstration force was large. This photo was taken when they were in conference in their big tent. From left to right J. A. Hymer, salesman; J. R. Graves, Los Angeles manager; G. M. Walker advertising manager; F. S. Moore salesman; Mrs. Lamont of the Los Angeles office; E. E Hergenhan field service; T. H. Luke sales manager; G. L. Dickenson for 25 years secretary of the company; Benjamin Holt, president; H. H. Eastwood, agent.

Stinson Tractor 18-36 hitched to Sanders 4-gang Extra Heavy Engine Plow, both distributed by Arnott & Co., Los Angeles. From left to right: Willard Arnott, president; M. D. Schatzman of Arnott & Co; Fred Stinson, inventor, and John de Brunynkops, factory general representive of Stinson Tractor; Pearl Bailey, driver.

The Killefer's entire force was on the field on the last day of the demonstration. They were good natured enough to pose for the Cultivator camera.

Agricultural News Notes of the Pacific Coast

Northern California

Cotton is now ready for picking on the red lands of Thermalito, Butte County.

New farm centers have been organized at Richfield and Dairyville, Tehama County.

Loggers are busy on the Feather River getting out pine logs for use in airplane manufacture.

Yolo County's hop harvest is well under way. Pickers are being paid $1.00 per hundred pounds.

All prune sections of the Sacramento Valley have been busy harvesting since about September 1.

Cotton in Butte County, growing on lands formerly planted to rice, is making unusually thrifty growth.

A new milk goat ranch with cheese factory is to be established at Berry Creek near Oroville, by B. C. McCallum.

The Alameda County farm bureau held its annual meeting and picnic at Fernbrook Park, Niles on September 7.

The Cloverdale farm center at its last meeting discussed exhibit at the county fair to be held at Santa Rosa, October 10-12.

Appraiser Grant of the federal land bank has been in Butte County for some time appraising lands upon which farm loans are asked.

The River Farms this year had 17,000 acres planted to wheat and barley in Yolo and Colusa Counties. It harvested 300,000 sacks of grain.

Grain growers of Northern California got together in Sacramento last week to discuss plans for forming a cooperative marketing association.

The California Bean Growers' Association and the Sacramento Northern Railroad have erected in Sacramento a warehouse of 200,000 sack capacity.

Serious damage to some grain, hay and drying fruits occurred because of freak storm which visited nearly all sections of the Sacramento Valley last Friday.

Word has been received in Sacramento that Secretary of the Interior Lane has authorized a cooperative survey of the great Iron Canyon irrigation project.

Glenn County's rice acreage is about 36,000, with prospect for good yield, running approximately 50 sacks per acre. Most of the fields are drained and will soon be ready for harvesters.

California Swine Breeders' Association proposes to go before the next state legislature and ask for a law which will require feed handlers to indicate the food value of a given proprietary feed.

Warm weather of the last month has been very favorable to the development of the rice crop. California's yield this year will be close to 4,000,000 sacks according to W. C. Davis of the Pacific Rice Growers' Association.

The California Almond Growers Exchange held a general meeting in San Francisco last week to fix minimum prices for the 1918 crop. The price is practically one-third in advance of that of last year.

A Chicago broker, inspecting California olive orchards and packing plants, said one reason for the popularity of California ripe olives has been the uniformity of pack. A few years ago it sounded different.

Central California

The market for Watsonville Bellefleurs is reported rather slow.

Watermelon and casaba growers of Turlock are pleased with returns for their crops.

Vineyardists of Livingston, Merced County, report receiving $32 a ton for wine grapes.

Stanislaus County held its second farm bureau hog auction sale at Tegner, September 18.

The wool pool of members of the Stanislaus County farm bureau has consigned to Boston market.

William Bernstein of Hanford has been reelected president of the State Poland-China Breeders' Association.

Members of the Beach Road farm center of Santa Cruz County have called for school boys to help harvest beans.

California's green fruit shipments this year have broken all records, being now 2000 cars ahead of last year same date.

During August over 1500 cows were tested in unit No. 1 of the cow testing department of the Stanislaus County farm bureau.

Sixty-five per cent of the dried peach output of the state has been secured for use of the army. This means about 13,000 tons.

Over 2000 sheep have been signed up in Stanislaus County by farmers who agree to keep them in small bands on their farms.

The railroad commission has authorized the Mt. Whitney Power and Electric Company to make a surcharge of ten per cent on all bills for electric service.

Grape growers are having a good season. Expenses have been high but prices are also good. Damage from the recent rain storm can not yet be accurately estimated.

The council of defense for California has ruled that every organization that may be asking donations for war relief must secure permit from that body before making solicitation.

Madera County farmers were guests of the Fresno County farm bureau on Wednesday, September 11. Over 100 visited some of the large vineyards and fig orchards of Fresno County.

Apple orchardists of the Watsonville district have secured a plentiful supply of labor from the mines of Amador and Tuolumne Counties. Pickers are being paid six cents a box.

Tulare County sent a delegation to the state highway commission urging the necessity for the completion of work already begun on the highway, and the feeling is general that permission will be granted to continue the work.

At the recent annual meeting in San Francisco of the California Associated Olive Growers Mr. Crighton of Corning was elected president; H. R. Bell of Orange Cove, vice president; Mr. Warner of Oroville, secretary. Picking of olives will begin about the first of October.

Serious damage was inflicted upon thousands of tons of drying prunes and other fruits in Santa Clara Valley by a rain storm last Friday and Saturday. In San Jose the downpour continued heavily for over 24 hours, approximately four and a half inches falling in that time.

Southern California

Westminster bean farmers are threshing this week.

The canning factory at Hueneme is running day and night on tomatoes.

Lima beans are beginning to come into the new warehouse at Hueneme.

The biggest tractor demonstration ever was staged in Los Angeles this week.

California will furnish 60,000,000 pounds of prunes to the army and navy.

Recent rains did practically no damage to bean sections of Southern California.

Cotton is nearly ready to pick in the Palo Verde section of Riverside County.

Local draft boards have been ordered to have selects ready for camps in 100 days.

Several of the bean growers of Chino Valley have joined together in the purchase of a thresher.

Ventura County reports her walnut harvest nearly a month late. Picking began last year August 20.

Directors of the California Lima Bean Growers' Association have set a price of 12 cents on Limas.

L. W. Wells of Somis, Ventura County, expects to secure 26,000 pounds of honey from his bees this season.

The Yucaipa Valley of San Bernardino County is picking apples. Its new packing house is ready to handle the crop.

The San Bernardino farm bureau is planning a big exhibit at the Southern California fair to be held in Riverside, October 8-12.

Threshing of beans is on in the Wintersburg district of Orange County following a two day let-up caused by damp weather.

A petition is being circulated for the formation of a drainage system southwest of Oxnard. This district contains 69,000 acres.

A suit to determine the right to use the waters of San Gabriel River above the canyon has been filed by ranchers of Duarte, Covina, and Azusa.

Blythe, Riverside County, has formed a broom corn association. Members hope to see a broom factory established at Blythe next season.

The Imperial County farm bureau is planning a drive for increased wheat production. Prices of barley and milo have taken a sudden drop.

San Dimas recently dedicated its new marmalade factory with a sort of "inaugural ball," the proceeds of which were used for French-Belgian relief.

Saticoy Walnut Growers' Association recently met in annual meeting and listened to reports of sales during the preceding year, amounting to $700,000.

The food administration has served notice on canners and tomato buyers that they must not purchase tomatoes which have been contracted to rival concerns.

The chamber of commerce of Chino, San Bernardino County, is calling attention to the fact that in this year of shortage of sugar her factory is lying idle, not a wheel is to be turned. It has made suggestion that one step toward correcting this siutation might be a bounty to the beet grower.

The Coast and General

Seeding of winter wheat has begun in Utah.

Oregon and Idaho are harvesting good crops of potatoes.

The Red Cross is conducting a campaign for used clothing.

Early sown wheat is already up in Umatilla County, Oregon.

The height of the apple picking season in the Hood River Valley.

Walla Walla County, Washington is caring for 161 French orphans.

Clean harvesting is the rule throughout the United States this year as never before.

A fruit growers' association at Riverside, Washington, is planning erection of a warehouse.

Arizona ranges are showing the need of rain, but stock is still showing fairly good condition.

Oregon sheep men grazing stock in the Ochoco National Park have organized a marketing association.

A war of extermination against coyotes will be waged this fall and winter in Jackson County, Oregon.

Hot weather has brought on Arizona cotton very rapidly, and aphis have disappeared from the Yuma district.

Great Britain has imported more that 8000 American tractors and has order placed for several thousand more.

Omaha, Kansas City and St. Louis were placed under a grain embargo last week because their full storage capacity had been reached.

Rail shipments of grain will be regulated jointly by the railroad and food administrations in order to prevent overloading at primary markets.

Owing to labor shortage in the shipyards of Washington business men will close their places of business on certain days and aid in the labor.

Nearly 100 alfalfa growers of Idaho recently met and fixed on a price of $17 a ton in stacks, first grade alfalfa hay. Sheep men of the state are protesting.

The state veterinarian of Oregon is conducting a sheep dipping campaign, serving notice that all sheep in certain counties must be dipped before October 15.

Heavy rains in Western Nevada last week interrupted threshing operations and damaged hay and grain to some extent, but put alfalfa and range pasture into excellent condition.

The peach season of the Northwest is very short and early this year. Last year Washington shipped 1920 cars, this year less than 650. Last year Oregon shipped 65 cars, this year seven.

Assurances have been received from Washington that at least ten vessels now being made available at Pacific Northwest shipyards will be utilized to move away Northwest grain and flour, in order to relieve the congestion in those commodities, which is becoming serious.

The federal government is preparing for securing cheap lands for returned soldiers, and to that end has appointed A. P. Davis, director general and chief engineer of the reclamation service, to have charge of the work. With him will be associated Elwood Mead, H. T. Corey and Frank W. Hanna.

War Gardens

By M. E. Bemis

IF "ONE who grows two ears of corn or makes two blades of grass grow where only one grew before deserves more of mankind than the whole race of politicians," how much more does one deserve who utilizes water that was running to waste to make hundreds of gardens where not one was known before, who makes gardeners of men who had much idle time, and indirectly makes happier, healthier, more prosperous and better contented thousands of people? Such is the achievement of the promoters and managers of the Inspiration War Gardens.

Such things can not be measured in commonplace terms of dollars, nor even in bushels and pounds of produce. I have seen women coming in from their gardens, their arms full of fresh vegetables, and I know that these could have been reckoned in money values, but the happy smiles on their faces with all that the smiles betoken can be figured nowhere except in the books the angels keep.

Where and what are the Inspiration War Gardens?

Out in the mountains of Gila County, Arizona, where the miners have dug deep into the earth in search of the much needed copper; where smelters send out dense clouds of sulphurous smoke that hang like clouds on the mountain tops, a white signal that unmistakably marks the mining town, there is a little valley on either side of a water course that, like most Arizona creeks, is dry the greater part of the year. Through the hills there winds a concrete road eight miles long. On either end of this roadway there are mining towns.

I am sorry that I don't know just who it was that thought of the big idea of the war gardens. At any rate the beginning was made shortly after that memorable day in April last year when Uncle Sam took over the job of "making the world safe for Democracy."

This season the acreage has been extended somewhat and many more gardens added. Now like most successful enterprises, there hasn't been much of accident about it. Everything has been carefully planned and the plans rigidly adhered to. Certain rules have been adopted and the gardeners have been obliged to follow them. There has been no haphazard, everybody-run-a-little - experiment - station-of-his-own work. In consequence the failures have been nil. The guiding spirit of the enterprise is J. R. Sandige, whose official title is "Agricultural Expert for Employees' Committee and County Agricultural Agent for Gila County, Arizona." His salary is paid party by the state agricultural extension service and partly by the Inspiration Consolidated Mining Company. Under his direction last year about 500 war gardens were laid out and about $30,000 worth of vegetables raised. The popularity of the gardens the first season induced the mining company to extend the acreage, and this season there are 650 gardens 100x50 feet or one-eighth of an acre each. In addition there are 105 smaller gardens for the school children and an area of 25 acres used by the Boy Scouts of both Miami and Globe.

The soil, like most of the small valleys, is of an alluvial type that is well adapted to gardening. The water is delivered from the pipe line at convenient places and then distributed by ditches with headgates and so arranged that each garden is alongside one of the main irrigation ditches. All seed, water, and land for the gardens is furnished free. The advice of the agricultural expert is also free, but the responsibility of the success of the war gardens as a whole is placed upon the gardeners themselves. An employes' committee is a sort of board of directors.

The amateur gardener (and it might be mentioned in passing that 70 per cent of the gardeners had never had any experience in gardening, or at least under irrigation) is not turned loose with a hoe and a seed catalog or a package of seeds from our congressman, as we poor ordnary mortals are. Of course we do not find on any bulletin boards any set of rules such as these, but some of us have had reason sometimes to wish that some of these rules could be enforced upon our neighbors:

* * *

These rules must be followed in order that the gardeners may obtain most from their gardens and in order to protect their products from being stolen.

If you let weeds grow for two weeks in your garden it will be understood that you do not want it and the garden will be issued to another.

If you cannot work your garden due to sickness, or other reasons, notify the gardening expert and he will hire some one to care for it until you are able to do so.

Do not flood or in any way disturb your neighbor's garden.

Do not bring dogs into the gardens.

Gathering vegetables from any garden but your own is absolutely prohibited. This means you are not to gather vegetables from your friend's or relative's garden.

No vegetables are to be taken from the gardens after dark.

If your vegtables are going to waste, and you do not gather them after being notified, they will be sold, and the money given to Red Cross.

Do not waste water or go away leaving the water turned on unless someone below you is irrigating.

* * *

Bulletin boards are placed around among the gardens where the gardener can hardly fail to find them, and he has but to read his instructions from time to time to know what to do without guesswork. Bulletin No. 7 is a fair sample of the brief but plain instructions that are given to the gardeners:

* * *

Plant all vegetables on ridges, which are made as follows: Mark off rows 2½ feet apart, throw up ridges from both sides so that the ditch will be where line was made; then level the ridges down until they are 17 inches wide on top.

Corn, pole and bunch beans should be planted three seeds, 1½ inches deep, in a hill. Hills should be two feet in rows two inches from the edge of the ridge. Plant so that the hills in the same ridge will be staggered, not opposite each other; then they will be one and a half feet apart. Thin corn to two stalks to a hill when one foot high.

Watermelons, Hubbard squashes and pumpkins should be planted eight seeds one and a half inches deep in a hill. Hills 7½x7½ feet apart. Thin to three plants when three inches high.

Muskmelons, scalloped squash, cucumbers, and roselle should be planted ten seeds one inch deep, in a hill. Hills 5x5 feet apart. Thin plants to four in a hill when three inches high.

Cabbage and peppers should be set two feet apart in rows three inches from the edge of the ridge. Alternate them like the hills of corn and beans.

Tomatoes and eggplant should be set two and a half feet apart in rows four inches from the edge of the ridge. Alternate them like the cabbage and peppers.

To transplant vegetables, daub the roots with mud before setting in place.

Ants can be killed by putting a tablespoon of London Purple around their hill once a week.

* * *

The gardener has to obtain his supply of seeds of the gardening expert and of course gets only the seeds that should be planted at that particular season. In making the rows uniform in distance apart, there is provision for planting in succession, and so the ground is kept occupied and something growing constantly during the entire growing season, which in the vicinity of Miami is up to about October 20. Some things are planted that take a season to mature among things that requre but a few weeks, for example tomatoes and cabbages are set among beets, carrots and radishes, so that when the latter are off the ground the tomatoes and cabbage will have the room required.

It happens sometimes that some gardener has a surplus of vegetables and he has a choice of two ways of disposing of the surplus. War garden markets are established where surplus vegetables are sold to those who do not care to make a garden and the proceeds are turned back to the gardener without cost to him.

The other method of disposing of the surplus is through the war garden canning kitchen, which is located near the office of the inspiration war gardens. The state agricultural extension service placed Miss Florence Dunbar in charge of home demonstration work in Gila County, and under her direction the war garden canning kitchen was established and here the smiling women bring the beans and tomatoes and corn that they cannot use and furnish the cans. The soulless corporation furnishes the fuel and hires the help to can the produce and hands it back to the grower in cans ready for use next winter. Miss Dunbar is ever ready to give information to housewives about home economics as well as canning, and I have little doubt but that many of those homes on hillsides are housing happier, healthier families because of the instruction, direct and indirect, which has been given the wives of the miners. Right here it may be permissible to diverge for just a moment to say that working together as these two young people have in helping others to make better homes, what should be more natural than that they too should become "inspired" with the home making spirit and decide to work together for the rest of their lives; so there was a wedding not long ago and Miss Dunbar is writing her name Mrs. Sandige now. Few young people have ever started out with the best wishes of as many gardeners as have Mr. and Mrs. Sandige.

A story usually ends with the wedding, but this is not a romance, just a war garden tale, and I am quite sure that young Sandige would not consider it complete without some reference to the value of the products gathered. From March 1 to July 10 of this year there had been gathered from these 650 gardens $27,855 worth of produce, and it is expected that

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The Right Work at the Right Time
One of the 50 bulletin boards and some of the gardens shortly after planting.

The War Garden Market
This market has sold as high as $73 worth of produce in a single day. It is said that the price of vegetables to the consumer in the district was reduced from ten per cent to 45 per cent within seven days after this market was opened.

Farmers Say It Costs Less to Operate the Plow Man

The real test of a tractor is the cost to keep it up. All-round economy means smooth operation and sound, solid construction—also saves the farmer money on every acre he works.

Wherever the Plow Man is used farmers vouch for its power, easy operation, successful use of kerosene and a very low upkeep expense. All of which has been proven by actual farm use in America, Canada and Europe.

Our special unit power plant construction conserves power for actual work and protects important parts from all dust and dirt

Plow Man Furnishes Power for Many Jobs

In the field they use it for plowing, listing, discing, smoothing, rolling, crushing clods and seeding.

For harvest work they do mowing, hay loading, reaping and binding, and corn cutting.

The belt work required includes threshing, silo filling, hay baling, well drilling, feed grinding, wood sawing, rock crushing, pumping, shelling, etc.

For road work the Plow Man is used in hauling, grading, leveling, scraping and dragging.

Other uses are hauling manure spreaders, pulling stumps, moving buildings, stretching wire fence, etc.

When our tractor is used for general field and belt work, it soon pays for itself in the saving over horses and by requiring less labor.

All-Standard Construction

Plow Man Buda 4-cylinder motor for heavy duty service. Bore 4¼-in., stroke 5½-in.
Foote Transmission delivers the power without waste.
Hyatt Roller Bearings reduce friction and save power.
Quick constant cooling with Perfex Radiator.
Bennett Producer Carburetor makes success of kerosene as fuel.
High Tension Magneto, Impulse Starter, one-fourth turn starts tractor.
Pivoted Front Axle provides flexibility for rough land.
Automobile Type Control. Easy to handle.
Trouble-proof French and Hecht Wheels.
Light weight—apporximately 4,400 pounds.
Dimensions—Height 5 feet 9 inches, width 5 feet 6 inches, length 13 feet, wheelbase 8 feet 3 inches.

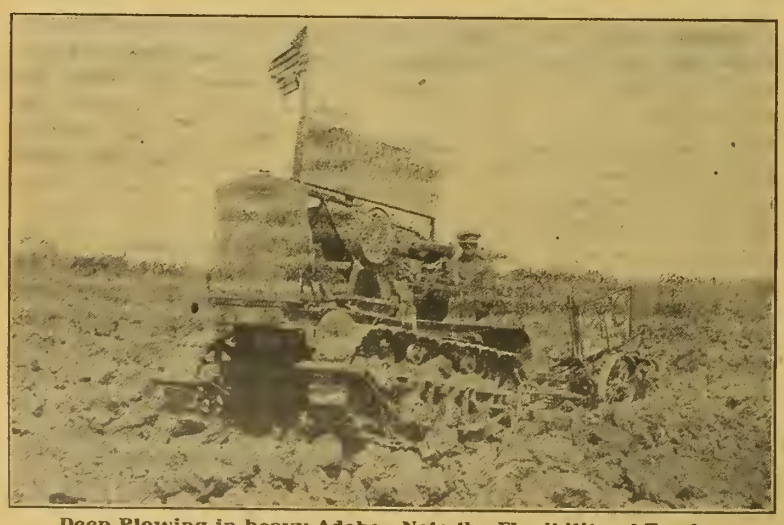
Agents and Distributors Wanted

Having demonstrated the Plow Man Tractor at the Los Angeles Demonstration, thoroughly fulfilling every advance notice given and promise made by us and the Interstate Factory, we are ready to make contracts in unoccupied territory throughout California.

Doak Tractor Co., Inc.

50 8th St., San Francisco Telephone Market 4482
236 Marsh Strong Bldg, Los Angeles Telephone 10175

Monarch Neverslip Tractor



Deep Plowing in heavy Adobe. Note the Flexibility of Tracks.

Manganese Steel Tracks Car Journal Bearings Easy to Handle Economical in Operation

The Monarch tractor is offered at prices much lower than is asked for other makes of equal capacity and the construction is such as to reduce the cost of upkeep to a minimum. Read what Charles E. Guest at Calipatria, Imperial County, has to say regarding it.

W. L. Cleveland Co., 211 No. Los Angeles Street, Los Angeles. Calipatria, Cal., September 1, 1918.

Gentlemen—Yours received. Will say in answer as to how my tractor is running and what I think of it is, that I am satisfied and well pleased with it. The Monarch has ample power and seems to be holding up well. I am pulling a Holt 5 Disc Plow, six inches deep with it, and it is no load, while the ground plows hard. I am running two shifts every day and have not been held up at all on account of the engine.

I don't think any one could go wrong by getting a Monarch; I have run mine three months and it has not shown any signs of weakness or wear and is economical to operate. Yours truly, C. E. Guest.

Made in three sizes, 6-10, 12-20 and the 18-30 are now in stock for immediate delivery. Send for printed matter regarding the Monarch.

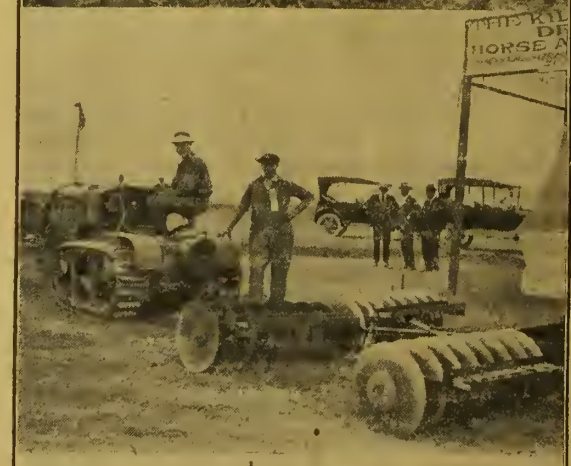
W. L. Cleveland Co., 211 No. Los Angeles St., Los Angeles, Cal. Phone 11177

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

A whole battery of Moline tractors. Exhibit of California Moline Plow Co. F. J. Johnson, California manager, standing near sign.

California Special Waterloo Boy. Handled by W. L. Cleveland Co., Los Angeles. W. L. Cleveland standing; L. M. Cleveland in driver's seat. Pulling an eight foot John Deere disk.

Emerson Tractor connected with Little Genius Power Lift Plow. H. B. Roberts, driver and tractor representative. Standing from left to right: C. E. Skidmore and E. L. Brock, state agents, Berkeley, California.



Yuba Tractor. A. F. George Co., distributors Los Angeles. Drawing Killefer Automatic Disk. A. G. Anderson, driver, and Arthur Christensen with Killefer Co.

Little Husky Tractor, manufactured by the Homer Laughlin Engineer's Corporation, Los Angeles. Pulling P. & O. Little Genius Power Lift Plow.

The R. & P. Tractor. Sold by the Republic Motor Truck Co. of California. Hauling P. & O. Little Genius Power Lift Plow. B. F. Poyer, manager Republic Truck Co., in center.

Interstate Plow Man Tractor. Doak Tractor Co., Inc., distributors, Los Angeles and San Francisco. Standing from left to right are R. J. Huffman, factory representative and B. G. Doak. Pulling P. & O. Little Genius Power Plow.

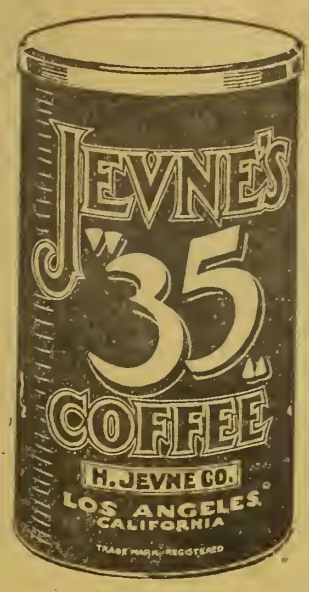
Union Sure Grip Tractor. Manufactured by the Union Tool Co., Torrance, Cal Standing, R. B. Dunsmore, manager; driver, C. B. Wait of the factory.

Fageol Tractor. Rush Hamilton, Fageol inventor, driving; standing, H. J. Ruddle, of Ruddle and Mennillo, Los Angeles distributors. Attached to tractor, P. & O. Tandem Disk Harrow.

Nilson Tractor. Smale and Waterbury, Southern California distributors, Los Angeles. Ed Smale driving tractor; E. C. Waterbury standing. Killefer subsoiler attached to tractor.

C. L. Best 75 Gas Tractor. Pulling John Deere heavy tractor plow. Standing on plow from left to right are S. R. Coffee, advertising manager and W. F. Cornell, inspector, both of the C. L. Best Co.; E. I. Crook, Los Angeles distributor; R. J. Mondell driving tractor.

Lambert & Trundaar Tractors. Wm. Gregory and Son, distributers Los Angeles. Standing from left to right are G. D. Louderback, general sales manager from factory; C. M. Fuller, superintendent Lambert Manufacturing Co.; W S. Gregory standing near Leonard G. Gregory seated on machine.



A Lot of People buy twenty cent coffee because it costs twenty cents

But the family that drinks coffee for the aroma and flavor enjoyed at the table ---wanting a coffee that suits its taste and pride, buys *Jevne's Coffee*

And too, some brands of coffee ought to be served in the sugar bowl or cream pitcher. All coffees make approximately the same number of cups to the pound, but *good* coffee requires less sugar and cream to meet your taste requirements. The thrifty housewife buys *Jevne's Coffee*----it's *good* coffee and needs less sugar and cream.

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CITRUS TREES

AWARDED THE GOLD MEDAL AT FOUR INTERNATIONAL EXPOSITIONS.

For Productive values, fine quality of fruit and vigorous growth Teague's bud-selected, (pedigreed) properly trained and carefully handled orange and lemon, pomelo and lime trees are the trees to plant. An experience covering a third of a century warrants the assertion that Teague Quality Citrus Trees possess these qualifications in a superlative degree. All the standard commercial sorts, and garden and ornamental varieties; the largest assortment of citrus trees in America. . . . We invite correspondence from intending planters. . . . Consultations on citrus planting by appointment. 1918 Price list just out; send for a copy.

The R. M. Teague Citrus Nurseries
Box 67, SAN DIMAS CALIFORNIA
FOUNDED IN 1889 AT IT 29 YEARS

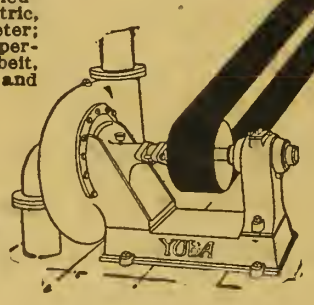
Test Special Belts
For all kinds of weather and all kinds of wear —for long life and long service

TEST SPECIAL is Guaranteed never to separate in the plies —IF IT DOES, WE WILL GIVE YOU A NEW BELT.

Tell us about your belt troubles—give full particulars as to h. p., electric, steam or gas, diameter; drive, cross, straight, perpendicular, width of belt, ply, distance, r.p.m., and your dealer's name.

Write as Soon as You've Read This

New York Belting & Packing Company



Does your belt separate in the plies?

Cheap quality of rubber cement will always cause the belt to separate in the plies.

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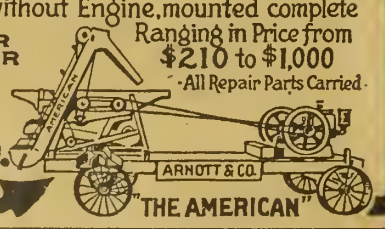
Home Office: New York City. Branches in all Principal Cities

BEAN THRESHERS THE TWO STANDARDS
Built Especially for California Conditions

THE FARQUHAR VIBRATOR SEPARATOR

Past the Experimental Stage
Eleven different models, with or without Engine, mounted complete
Ranging in Price from $210 to $1,000
All Repair Parts Carried

Guaranteed by The House of ARNOTT"
Ask The Grower Who Owns One
Write for Folder, Specifications, Prices Etc.



"THE AMERICAN"

ARNOTT & CO.
BEAN THRESHER HEADQUARTERS
112-118 So. Los Angeles St. Los Angeles

When writing advertisers, mention The Cultivator.

Winter Cover Crop

Written for California Cultivator By D. J. Whitney

THERE are certain things in farming which are supposed to be the right thing to do, but just the same they do not work out well in ordinary practice. Winter cover crops in Tulare County orange orchards seem to be of that nature, particularly on heavy soils and it would be a valuable thing at this time of the year when a person should be planning for a cover crop, if he is going to have one, if some citrus expert from the Riverside experiment station, or some one else, would explain just how a man could gain the advantages of a good cover crop without experiencing the disadvantages, which now are very serious.

Everybody is supposed to know that most California soils are short of humus and that humus forming material is of big value, so that if a good cover crop could be turned under and made part of the soil it would be an immense help to the trees; it would promote better tilth, improve irrigation and be of service in every way. Next, good cover crops of the clover type, such as peas, vetch and melilotus, add immense amounts of nitrogen to the soil, which is the most expensive and valuable plant food known. Thus, the advantages of a cover crop are big; provided they can be secured, but common practice on the typical orange soils of Central California shows that they are more trouble than good, that the orchards are actually hurt by winter cover cropping. Even natural growth is discouraged as much as possible, so that it is a saying that one good day's cultivation in mid-winter, with the ground in proper shape, is worth a week's cultivation in spring—it kills so many weeds.

On light, well drained soil a person can get on the ground to plow soon after a rain and usually will have no difficulty in getting the vegetation under at the proper time and his ground in good shape before blossoming time. On the heavy soils common here in citrus orchards growth is terribly rank in fairly moist winter, and the ground stays wet until the growth is so heavy that it is hard to do anything with it and until so late in spring that there usually is no great amount of time to spare for cultivation, even if there were no cover crop. If a man has stock and tools for say 40 acres, the work is so hard in getting a heavy cover crop under that only ten acres may be attended to at all well, and on the rest of the place the ground will not be right for plowing after the ten acres are plowed.

In plain, actual fact, on typical orange land in a typical spring after a typical winter a man with a big cover crop cannot get his ground in shape until toward fall. Until that time his soil is cloddy and mixed with dry stems of what has grown and his trees are yellow and unthrifty. He adds in theory a lot of nitrogen and humus, but in fact he makes a lot of trouble that is too much for him, his soil is in bad shape and his trees still worse. The main question in cover crop raising is not what will make the best growth or add the most nitrogen, but what can be grown without doing twice as much harm as good. Another way of putting it would be: how can a cover crop be turned under early enough in the spring and in good condition so that proper cultivation and irrigation can be given? This is not a question for loam soils, but for the standard types of heavy soils with a good deal of sticky clay in them. The benefits of nitrogen and humus are so great that a suitable answer to this question would do an immense amount of good.

Last fall a vineyardist planted a furrow of sour clover (melilotus) down the center of each row of his vineyard. It made an immense growth and ought to have done a lot of good to the soil, as it probably did. This was a loamy soil and the practice might not work out well in orange orchards, but it occurred to the writer that two furrows like this down each tree row, or one furow where trees were large and close together, would do lots of good in supplying humus and nitrogen and yet be easily plowed under. Whatever system could be profitably used ought certainly be described by those who ought to know and who most strenuously urge cover crops.

Aids Marketing of American-Egyptian Cotton

INCREASED prices being paid for American-Egyptian cotton grown in irrigated valleys of the Southwest, an industry fostered by the United States department of agriculture, with the amount of cotton ginned during the 1917-1918 season, are shown in reports of investigations and surveys by the bureau of markets of the department.

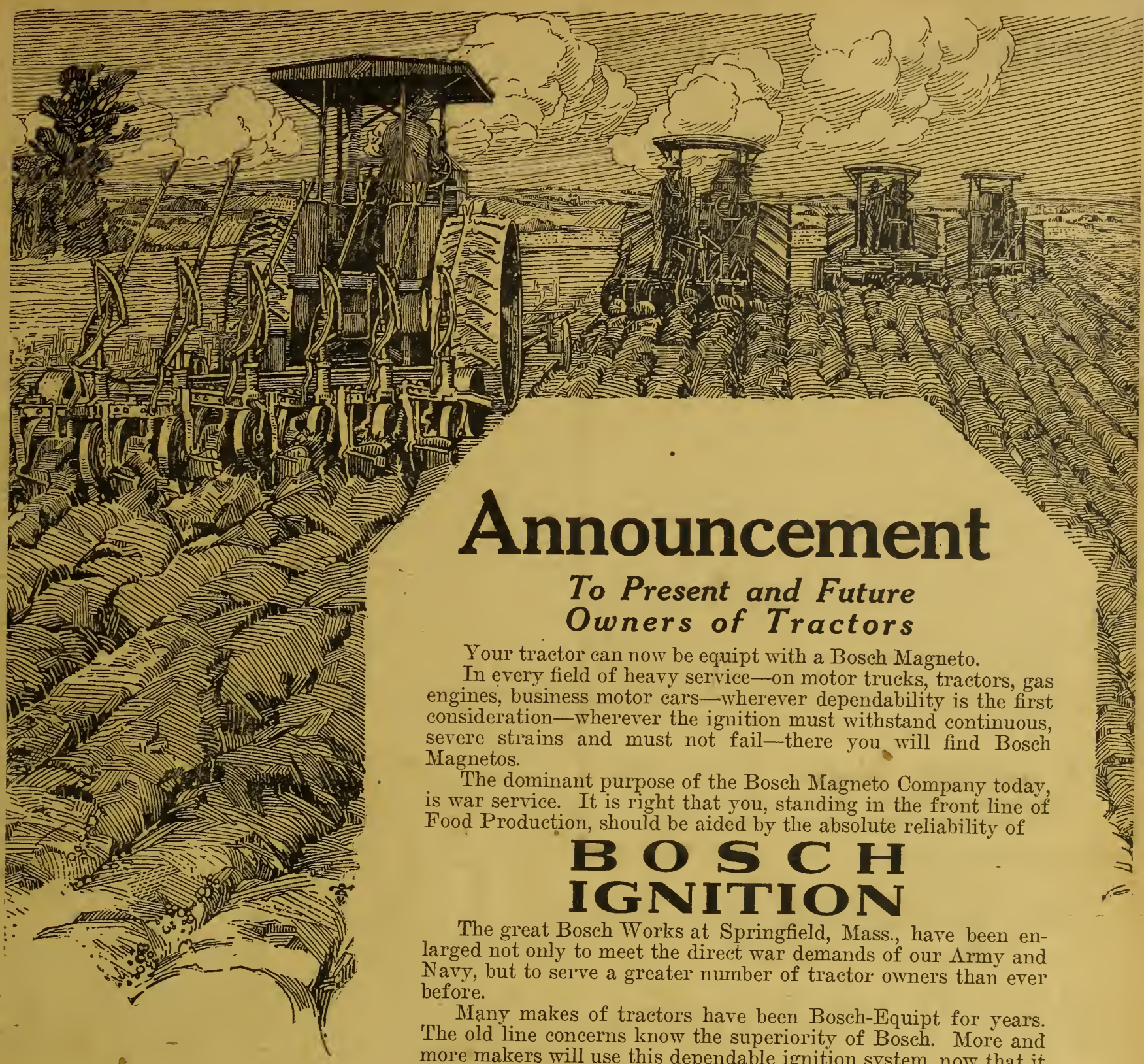
Of the favored Pima variety which has largely superseded the original Yuma because it is more prolific, matures earlier and has fiber about one-eighth inch longer, 5,108,553 pounds of seed cotton were ginned at Tempe, Arizona. Prices for the 1,368,822 pounds of lint obtained ranged from 60 cents a pound in a few cases to 80¼ cents in many. At Winterhaven in this state 3,097,236 pounds of Yuma seed cotton were ginned.

Following are summarized reports of the bureau of markets on gins handling the American-Egyptian cotton:

During the season of 1917-1918 there was ginned at the gin of the Tempe Cotton Exchange, Tempe, Arizona, a total of 3,778,680 pounds of seed cotton of the Pima variety, giving a total net weight of lint of 1,001,024 pounds. The lint outturn of the above cotton was 26.48 per cent. The total number of bales ginned was 2112, the average net weight being 463 pounds per bale. The grades and staple lengths were as follows: Grades; No. 1, or fancy, No. 2 or extra, No. 3, or choice, No. 4 or standard, No. 5 or medium, below medium. Staples; 1 11/16-1¾, 61 per cent; 1⅝-1 11/16, 37 per cent; 1½-1 9/16, two per cent.

The average monthly price for cotton ginned at the above plant was as follows: October, 71.37; November, 78.00; December, 74.72; January, no sales; February, 68.00; March, 69.20; April, 72.55; May, 74.07. The lowest price was 60 cents and the highest 80¼ cents; only ten bales being sold at the low and 114 at the high.

The public gin at Tempe, Arizona, ginned both the Pima and the Yuma



Announcement

To Present and Future Owners of Tractors

Your tractor can now be equipt with a Bosch Magneto.

In every field of heavy service—on motor trucks, tractors, gas engines, business motor cars—wherever dependability is the first consideration—wherever the ignition must withstand continuous, severe strains and must not fail—there you will find Bosch Magnetos.

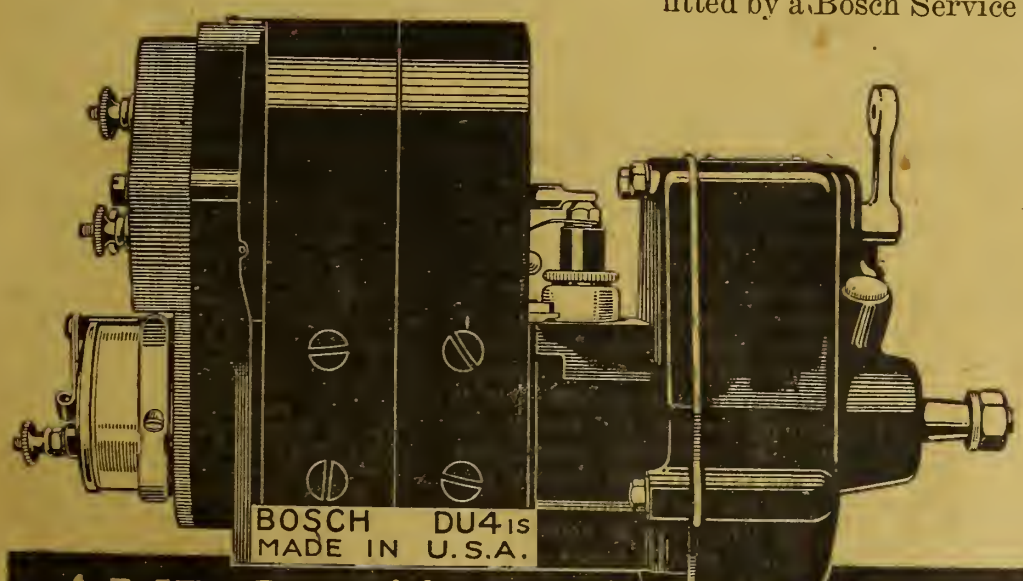
The dominant purpose of the Bosch Magneto Company today, is war service. It is right that you, standing in the front line of Food Production, should be aided by the absolute reliability of

BOSCH IGNITION

The great Bosch Works at Springfield, Mass., have been enlarged not only to meet the direct war demands of our Army and Navy, but to serve a greater number of tractor owners than ever before.

Many makes of tractors have been Bosch-Equipt for years. The old line concerns know the superiority of Bosch. More and more makers will use this dependable ignition system, now that it can be had in quantities for early delivery.

But don't leave it entirely to the manufacturer. Other men may design, build and sell your tractor, but *you* are the one who will use it. You are the one who must make sure that you never will be held up by ignition trouble. You *will* make sure of absolute reliability when you specify on your order *"Bosch Magneto Ignition."* Or, for your present tractor, have a Bosch Magneto fitted by a Bosch Service Man.



There's a Bosch Service Station in every State. Write there or to us for any Ignition information.

BOSCH MAGNETO COMPANY

Main Offices: 238 West 46th Street, New York City
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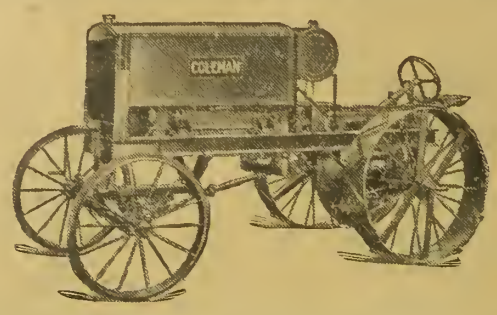
AMERICA'S SUPREME IGNITION SYSTEM
MOTOR TRUCKS - TRACTORS - AIRPLANES - MOTOR CARS - MOTOR BOATS - MOTORCYCLES - GAS ENGINES - ETC.

The Coleman Tractor 16-30



We were unable to show at recent demonstration on account of freight conditions and Tractors not arriving in time.

The Coleman Tractor

The Coleman Tractor is the sensible Tractor, the answer to the nation wide demand for a Tractor less complicated with fewer parts, easier to operate, lower fuel consumption. Having fewer parts the COLEMAN is less likely to need repairs or adjustment. All parts within easy reach, easy to get to, and easy to keep in perfect running order.

WORM DRIVE—the correct principle of efficient power transmission, running in a bath of oil, all moving parts enclosed, positively dust proof. THE WORM DRIVE MECHANISM IS POSITIVELY GUARANTEED FOR WORKING LIFE OF THE TRACTOR. This is the strongest guarantee ever issued by any tractor manufacturer.

THE COLEMAN TRACTOR contains the famous CLIMAX MOTOR 600 to 800 R. P. M. full force—feed oiling system; over-sized bearings throughout. TIMKEN & HYATT bearings throughout. TRANSMISSION FORWARD REVERSE BELT controlled by one lever. No intermediate gears. Final drive direct from engine through WORM and WORM GEARS.

THE COLEMAN TRACTOR is as easily driven as an automobile and turns in an 8-foot 6-inch radius and can be handled by any boy or woman. It has foot pedals for the brake and clutch and the control lever governs the forward reverse speed and when you consider durability, efficiency and economy THE COLEMAN TRACTOR is, indeed, the ideal tractor for the rancher and orchardist.

Write for our free descriptive matter.

The Coleman Tractor Corporation

1111 Story Building, Los Angeles, Calif.
1200 Van Ness Ave., San Francisco, Calif.

P&O

27 Tractors

Pulled

P & O Light Draft Plows

At the Los Angeles Demonstration
39 Tractors Were Entered

66⅔ Per Cent

Made a Wonderful Showing With

A Perfect Plow

Write for Catalogue "P"

Dixon & Griswold

146-148 No. Los Angeles St.
LOS ANGELES

varieties. A total of 1,329,873 pounds of seed cotton of the Pima variety was ginned, giving a total net weight of lint of 367,798 pounds. The lint out turn of the above cotton was 27.66 per cent. The total number of bales ginned was 722, the average net weight being 487 pounds per bale. The grades and staple length were as follows: Grades; No. 1 or fancy, eight per cent; No. 2 or extra, 62 per cent; No. 3 or choice, 22 per cent; No. 4 or standard, five per cent; No. 5 or medium, three perecent. Staples; 1 11/16-1¾, 62 per cent; 1⅝-1 11/16, 37 per cent; 1½-1⅝, one per cent.

The average monthly price for cotton ginned at the above plant was as follows: October, 71.58; November, 78.83; December, 73.04; January, no sales; February, no sales; March, 71.35; April, 72.70.

The lowest price was 62 cents and the highest was 80¼ cents; only two bales being sold at the low and 111 at the high.

At Winterhaven, the Winterhaven Egyptian Cotton Exchange ginned the Yuma variety only and for the entire season ginned a total of 3,097,236 pounds of seed cotton, giving a total net weight of lint of 848,487 pounds. The lint outturn was 27.39 per cent. The total number of bales ginned was 1757, the average net weight being 460 pounds per bale. The grades and staple lengths were as follows: Grades (Yuma); No. 1 or fancy, four per cent; No. 2 or extra, 31 per cent; No. 3 or choice, 40 per cent; No. 4 or standard, 18 per cent; No. 5 or medium, six per cent; No. — below medium, one per cent. Staple lengths (Yuma); 1 7/16-1½, 84 per cent; 1⅜-1 7/16, 15 per cent; 1¼-1 5/16, one per cent.

About 50 bales were sold early in the season for 73 cents. The bulk of the cotton, however, was unsold at the time this survey was completed.

The public gin at Tempe has cooperated with the department of agriculture and with the assistance of the department has had supervision of distributing the new Pima seed.

Bureau representatives who were present at the principal marketing centers during the ginning season continued their studies of the standardization of the Pima variety. During the season a large proportion of the crop was graded and stapled. In addition to data relating to standardization of grade and staple, information has been obtained as to the capacity of the various gins, the percentage of lint and seed yield, the grade and staple, and selling prices. These facts may be compiled later in bulletin form.

WAR GARDENS

Continued from Page 301

the season's crop will go over $50,000.

Is it worth while? From a monetary standpoint it is a big thing for the miners. Fifty thousand dollars divided among 650 families is no small saving. From a monetary standpoint I am inclined to think it has paid the Inspiration Copper Company, and paid them well. I doubt if any county agricultural and home demonstration agents anywhere have been able to accomplish more in the way of producing and conserving garden products, and so it has most certainly paid the state and the government.

In the larger way of better homes and better health of better men and women, and wiser boys and girls, of mining troubles averted, of men that might have become I. W. W.'s if they had not been too busy and too prosperous to listen to propaganda that is fed to men with too much idle time—of these things that cannot be weighed on the kind of scales that we use or estimated in dollars and cents, we may not know until we read the balance sheet taken from the books that the angels keep.

MORE POWER, MORE FOOD

Continued from Page 299

Occasionally the spectacular cropped out; the tractor girl in khaki uniform was prominent, and some tractor owners were putting their machines through paces intended to show extreme possibilities rather than efficient workaday service, and once or twice we saw demonstration of lack of understanding of the limits of the machine, but in the main straightaway hard work was demonstrated by thoroughgoing experts in tractioneering.

These latter demonstrations taught many a farmer operator how to secure more power from less oil and less gas. Of course there were lectures on efficiency and on tractioneering in general. The Automotive School, while not in actual operation, maintained during the demonstration headquarters at which tractor parts and charts, drawings and designs were exhibited and explained.

One feature which made the demonstration most valuable was the nature of the soil. It was of adobe, and in some sections so extremely hard that when plowed up with the big moldboard the surface seemed almost vitrified by the friction. In fact, the polish put upon some of the great clods thrown up, in connection with the black color of the soil, gave the impression from a short distance that the ground was glistening with moisture.

The big 75's with powerful gangs of either disks or moldboards majestically went across the field, throwing up clods almost as large as a man, and with apparent ease, but we doubt not records will show they ate up the gas.

But the little orchard types never flinched at the soil conditions and handled their one or two bottoms more easily and with better understanding than has been the case at any former demonstration.

Not once during this demonstration did we hear the expression, "light draft." We recall some years ago that nearly every advertiser of farm implements laid stress upon the fact that his particular line of goods was "lighter draft" than any other on the market. We also recall the time when one firm—we believe it was the Killefer people—began the manufacture of orchard implements which would stand up under any service. They took the ground that effective work called for effective tools, and if two California bronchos were not sufficient to handle the implements which would do the work, they should be replaced and heavier horses and more of them secured.

And that lesson of some years ago was more strongly reenforced at this demonstration. Strongly built implements with plenty of power are necessary for greatest production and more food.

There were practically a half dozen tractors never before seen at a Coast demonstration. Some of the Eastern manufacturers have understood that Coast conditions were "different" and have made no endeavor to supply this state. Others have sent their engineers, learned California's demands and are now preparing to meet our conditions.

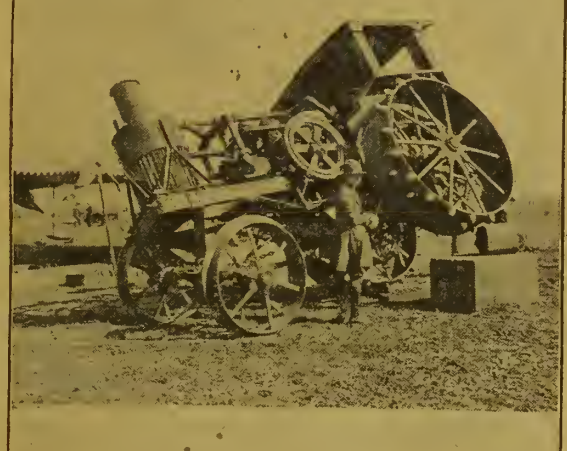
But the money! There's the rub. Modern implements and power in war times cause the farmer raising crops, even at present prices, to stop and hold his breath. But a bit of cold-blooded figuring soon convinces the man who has conditions which permit of fullest use, either on his own place or in the neighborhood, that if the money is available or can be secured there is a possibility of "getting by" with the investment.

This brings us to another feature of improved implement farming brought out during this demonstration. That is the financial side, or the handling of tractor paper which enables the dealer to dispose of his wares on partial payment plan. These plans are not fully perfected, however, for we believe the cost to the farmer is too high. Eight per cent interest with a

Continued on Page 319

Sandusky Tractor 10-20 Model J. M. C. King, driver, and William Raab, California distributor, Los Angeles. Pulling 15 ft. Forkner light draft tiller.

Samson Sieve Grip Tractor. Conected up with the Killefer Sub-soilers. C. C. Mahan, driver, standing by wheel of tractor. A. M. Hudson on the left and G. A. Flood on the right. Both with Killefer Mfg. Co.



The Avery Tractor. Handled by F. H. Poss Co., San Francisco. Mrs. W. H. Cline standing, whose husband is service man of jobbing department for the Avery Co.

Bean TRACKpull Tractor. Vernon Adler, driver. Standing, T. R. Henderson, Los Angeles manager Bean Spray Pump Co., San Jose.

Monarch Tractor. Handled by W. L. Cleveland Co. Pulling a P. & O. Little Genius Power Lift Plow.

The Bear Cat Tractor W. J. Burt & Co., Los Angeles, distributors. W. J. Burt standing between pennants on tractor. Driver, Anna L. Merrick.

The Tractor that accomplished more at the demonstration than claimed

18-36 STINSON TRACTOR

THE STINSON TRACTOR has a greater per cent of reserve power beyond its rating than any other tractor on the market.

At the L. A. Tractor Demonstration the Stinson pulled easily a 4-Disc Sanders Engine Plow. No other tractor of same rating pulled more than 2-Discs.

The Stinson Tractor is equipped with the Stinson-Beaver motor with a 4¾-inch bore and 6-inch stroke.

Write for Free Catalogue **Territory Open—Agents Wanted**

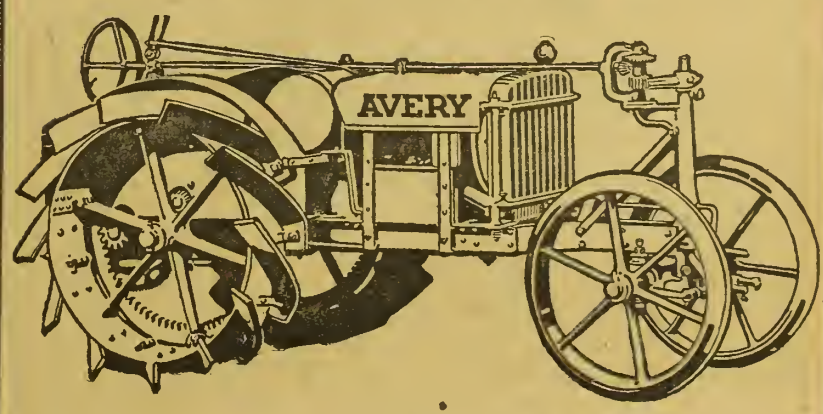
Distributors for So. Cal. and Arizona

Arnott & Company

Established 1892

112-118 So. Los Angeles St. **Los Angeles, Cal.**

$650—Here
New Avery 5-10



Fuel cost 11c. an hour. Selective Three Speed Drive. Hyatt Bearings.

F. H. Poss Co.

Room 1 Times Bldg., Los Angeles **67-69 Beale St., San Francisco**

GIANT FARM POWDERS
STUMPING — AGRICULTURAL

Uniformity is another word for economy and safety. When the same things happen with each pound of Giant Farm Powder, you know not only how much to use, but what results to expect and how to handle the explosive.

Giant Farm Powders are surer, safer and more economical because our tests guarantee every pound. We maintain our own completely equipped chemical division to inspect Giant Farm Powders during every process of manufacture. Absolute uniformity means absolute dependability. Like results always obtained under like conditions make western farmers prefer Giant Farm Powders.

"Giant Powder is the most satisfactory," says John Zurr, Santa Rosa, Cal. "I account for this because Giant Powder is made with the utmost care."

Caution: Be sure you get the genuine. That other explosives are often called "Giant Powder" indicates the high quality of the original. Look for the Giant trade-mark on every case.

The coupon (or a postal mentioning this paper) will bring you the big book "Better Farming." Tells how to remove stumps, prepare tree beds, and do all kinds of farm work cheaper and better. Write for it now.

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Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

Garden Tractors

Written for California Cultivator By Ernest Braunton

WHILE at the tractor show on Wilshire Boulevard, Los Angeles, last week I saw a garden tractor. We need a small garden tractor like this one very badly, but it does not seem to be perfected as yet. One strong point for garden use is the fact that its plow is ahead or in front of all else and in plain sight of the operator. Such an arrangement is absolutely necessary for work close to plants. There is no doubt that small garden tractors will soon be on the market at such moderate prices that every householder may afford one. Even at present price of the smallest effective machine, less than $100, two or more neighboring lot owners could afford to cooperate in the purchase of one for joint use.

Native Wild Flowers

The season is ripe for the preparation of a bed for native California wild flowers. That they be not hampered by weeds it is better to wet the soil and start the weeds first. After you are satisfied that all weed seeds in the soil have sprouted the soil may be hoed or spaded to kill the weeds and the flower seeds sown broadcast. This method is an easy one and fairly well relieves one of the task of weeding. All who have once grown native wild flowers in this manner are strongly in favor of continuance. We may all profit in knowledge by a closer acquaintance with the wild flowers of our own state and it is a duty we owe our children to see that they have a closer communion with them than has fallen to our lot.

Matilija Poppies

Those growing Malitija poppies where no water reached them during summer may cut them down to the ground. You may be just as savage with them as you please, they cannot be harmed. Usually I take a saw and cut them off just at surface of soil. Sometimes I hoe them off, cut them off with a shovel, even break them down with my feet by a good vigorous treading, and then pull the old stems away. I could discern no difference in quality or quantity of flowers or vigor or other growth effects. The one thing sought is to completely remove the old top. You will no doubt do it with the pruning shears, but that is the slowest method. After tops are removed you may water them to start growth or leave that task for the rains. The plants need no fertilizer, and if any be given it should be a very light feed indeed. If of stable manure it should be well decayed.

Treating Native Trees

Native trees, of which live oaks are a good example, may now be watered to start the season's growth, if they have gone unwatered throughout the summer. Such a procedure will insure a long season's growth. It is now the best time of all the year to transplant them, especially if this is done without removal of soil, for now they are most nearly dormant. I have removed trees of live oak from their place in the wilds where they had grown for 20 years and were four or five inches through the trunk. Prepare your tree hole in advance, both wide and deep. Dig out all the roots with the tree that you can get. Do not injure them and do not let them get dry. I put wet hay or sacks on the bottom of the vehicle and cover with the same material. Water immediately after planting. Cover tops if you can and even denude them of foliage after a few days if you can spare the time to pull leaves off.

Treating Rose Bushes

The cool days of autumn have now come, which dictates that rose bushes should not be severely pruned now except they are in very warm locations. The first of September is the best time for removing all the tops. Each year I prune mine a little earlier and find summer-dormant bushes should not be "slaughtered" later than stated. Small weakly wood may be removed now, whether or not bushes have been summer-rested. Young bushes set out last year should not be pruned this year. It is better to allow all young bushes to make unrestricted growth during the first season at least for you get them a heavy top from which to choose a good framework. In fact, the older the bush the greater the need of pruning, especially of severe pruning. Young bushes are generally pruned too much; old bushes not enough. It requires more courage to prune a favorite rose bush than it does to face a burglar.

Fundamentals and Incidentals

Do not found your garden on incidentals except for commercial reasons. The farmework of the garden should be shrubs of a permanent nature. Cannas, dahlias, and all herbaceous plants are, by their very nature, but incidentals. They do not remain intact throughout the year and therefore cannot give a garden character. I have seen gardens, and even small public parks, where during the summer tall cannas were the dominating growth. Such arrangement is open to most severe condemnation and shows a lack of taste and appreciation of plants. When making a garden build a permanent structure, one that will stand, even as you would build a house. Let the seasonal plants fill in odd places and be mere incidentals to the garden structure proper.

Lippia Canescens

We have nothing yet that will take the place of lippia, it has stood the test of years. As a drouth resistant ground cover, one that may be indiscriminatingly run over and misused, mistreated, and downtrodden generally, "it is a hummer." Like the shamrock in the song "Wearing o' the Green" it will take root again in spite of great abuse. It may safely be used anywhere for it is easy to get rid of, never becoming a pest in field or garden. It is, however, injured by heavy frosts, though seldom killed. Let us use it more freely than ever before.

The Smaller Fruits

We do not pay enough attention to the smaller sub-tropical fruits. We all like to grow blackberries, gooseberries, currants, etc., but ignore guavas, eugenias, carissas, etc., that are fully twice as large. People of today seem less tolerant of the small fruits than the last generation. Some of these we can scarcely do without as there are no good substitutes. We cannot dismiss the strawberry. But in the introduction of new fruits we set the standard in size by the apple, pear, and peach. Therefore avocados are favored by all, and justly so, but there are small and little known fruits that are just as luscious and of good food value. I feel sure that eugenias and other members of the myrtle fam-

ily are destined soon to play a bigger part in our food suply.

Limes for Home Use

For several years I have grown both lemons and the Tahiti seedless lime and have no hesitancy in saying I much prefer the latter for home use. The lime has a richer flavor than any lemon, is seedless and almost rindless. The skin is as thin as paper and as full of juice as any fruit known. In fact, when fully ripe it amounts to a sac of lime juice only, for the waste pulp is indeed of small amount. The bush or dwarf tree is quite ornamental and the foliage much more so than that of the orange or lemon. The Tahiti seedless lime is, however, more susceptible to frost damage than the lemon and this fact will restrict its use to the warmer locations.

Use More Palm Leaves

More and more each year I come to view with favor palm thatched seat covers, arbors, garden houses, etc. The only objection to their use is danger of destruction by fire. Where this is not of consequence, where plants would not thereby be destroyed or the fire communicated to other buildings or other inflammable material, palm-thatched roofs are a source of comfort and convenience. They may easily be made proof against rains, for I have one of this sort and the roof is less than "half-pitch." The method pursued is to use plenty of leaves and place them as carefully as you would shingles or shakes.

Queries

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Southwest Museum

Please tell me something about the Southwest Museum. Is it open to the public? If so, what days and admission charge?—Subscriber, Long Beach.

The Southwest Museum is one of the representative institutions of Los Angeles which every visitor of the city should see. It occupies one of the most prominent hills midway between Los Angeles and Pasadena on the old main electric line along Pasadena Avenue. It was founded that things having to do with customs and the history of the Southwest might be preserved. It is open every day in the year from 12 to 5 o'clock. No admission charge is made.

Nematodes on Beans

I send Lima beans affected with little knots all over the roots. What is the trouble and how may I prevent it? —Subscriber.

This is only an extreme case of nematodes. With an ordinary vest pocket magnifier one may see the tiny pearl-like bodies of females of the nematodes. This is a serious pest, especially serious because of the fact that there is no cure for plants now infested. The only way of getting rid of the pest is by starving it to death by planting the ground to crops which are immune to the insect's attacks, such crops, for example, as barley, wheat, alfalfa, sweet potatoes, onions, radishes, snap beans, lettuce, cabbage (to a limited extent). Some other crops are partially immune. After a year or two of planting to such crops the soil is partially freed from the pests. Plowing in midsummer and throwing up the soil to the direct rays of the sun is also beneficial. When the soil in a green house becomes affected it is sterilized by the use of formaldehyde or steam heat.

Fleas on Rabbits

My rabbits have fleas around eyes, ears and nose. Chickens also have them.—Subscriber, Winchester.

Hold rabbit over paper and rub fur with buhach powder, and the fleas will drop off and can be burned. You also can dip a cloth in kerosene and wipe fur gently. Put kerosene or disinfectants in hutches, not in nest, and on hutch supports, also ground around hutches. Put new bedding in hutch boxes. The sticktight flea attaches itself to the comb, ears, eyes of animals, especially chickens, burying its head in the flesh. There are flea salves sold by poultry dealers that will remove these. Use according to directions on each lot. Thoroughly disinfect premises. We suggest keeping rabbit hutches separate from chicken houses.—W. L. W.

Garden Questions

Please name some plants, annual and perennial, also shrubs (both large and small) that are particularly adapted to a hot, sunny situation on south side of house. Of the shrubs especially, please give briefly name, description, kind of flower or fruit, size and characteristics of plant, height, care. I want evergreens especially, don't care so much for deciduous plants.

I have several different kinds of fuchsias in a southeast corner. Do well in spring, but now look very shabby. I never water anything near as much as most people do. Do you think it gets too hot and sunny for them there? Could I cut them down now, or any other time, and have them come on again all right? If so, when is best time to cut them, and how much can they be cut?

Please name two or three especially good climbing roses for an east porch. —Subscriber.

Our space limitations preclude answering such questions fully. Such lists have often appeared in the Cultivator. The up-to-date nursery catalog gives the precise information asked for. The best alternative is to look about in your own town, note what plants you admire in the various gardens, and procure them for yours.

Fuchsias may be cut down to any size, but it is best done in March after frosts are past and at the time the

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is responsible for my bumper crops. To begin with I plant the trees in blasted holes instead of spade-dug holes. As a result my trees bear a year earlier than they ordinarily would. They give finer fruit and more of it year after year. The death rate is unusually low too. You never saw such healthy orchards.

"Then I help keep them healthy with Hercules Dynamite by cultivating the soil down around the ends of the roots so they grow better. I tell you it pays at all points. That motor truck proves it."

You ought to use dynamite yourself. There is a book, "Progressive Cultivation," that tells all about it. The reading of it will mean money in your pocket. It is sent free on request. Mail the coupon below, *today*.

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The Nilson Patented Lever Hitch insures good "Grip" or Traction under all conditions. Three Drive Wheels keyed to the axle form a **Wide Drum Drive** This keeps the tractor **on top** of loose ground and prevents packing of the soil.

In every detail Nilson Tractors set a high standard of mechanical perfection. They are equipped with the famous Waukesha four cylinder Tractor Motor and Hyatt Heavy Duty Roller Bearings. The transmission gears are of especially case-hardened steel machine cut, and are enclosed and run in oil. This means a great deal in increasing the life of the tractor. All working parts are enclosed against dust and grit. The motor is equipped with the famous Bennett Carburetor Air Cleaner. In building Nilson Tractors everything has been done to make them long lived and reliable so that every Nilson buyer may receive the greatest value for his money.

Built for California Conditions

Nilsons have made good in California.

American Fruit Distributors, Brawley, (Imperial Valley) Calif., have used a Nilson Junior discing 50 acres per day of 12 hours, using 18 gallons distillate and two quarts lubricating oil. They have purchased their second Junior.

J. M. Warner, Turlock, Calif., has used a Nilson Senior this season to plow and disc 300 acres of river bottom land, pulling four 14 inch plow bottoms, and later operated a 26 x 46 grain thresher during the entire season.

It will pay you to investigate Nilson Lever Hitch Tractors. Write or wire us.

Distributors, with Repairs and Service, at Los Angeles and Stockton.

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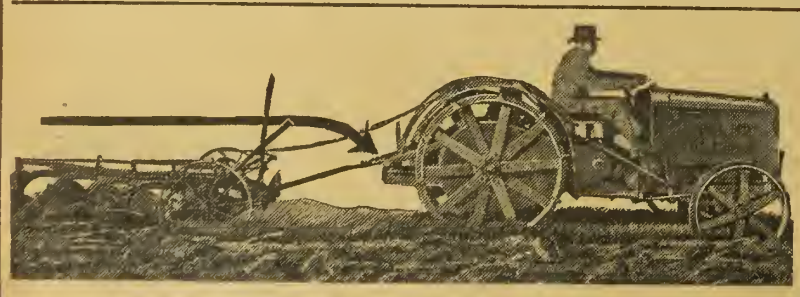


plants are ready for spring growth. If pruned earlier frosts may nip the new growth as fuchsias are not altogether hardy locally. Fuchsias prefer slight shade, but in coastal sections do well in full sun but need good supply of water and deep rich soil. A southeast corner is much hotter than a southwest corner. It is pretty warm for them.

Climbing Cecile Brunner, a small pink rose, is as fine for porch as any you can find. Is nearly ever blooming. A fine deep red is Francois Crousse. For yellow use Duchess de Auerstadt; for white, Climbing Kaiserin Augusta Victoria. Aside from roses Jasminum primulinum, our newest yellow jasmine, is a splendid house climber.

Fava Beans

In your issue of August 24, 1918, you refer to Butte County's pack of fava beans. What are they? Never heard of them. Bailey's Cyclopedia does not refer to them. Please explain. And as to planting in the fall would infer they are immune to frost.—Subscriber, Banning.

Horticultural Commissioner Earle Mills of Butte County says: "The fava bean is the commercial name for a special pack of the Broad Windsor, this packing process being a trade secret. The fava bean seems to be in considerable demand among the Latin population of our large Eastern cities, and was all imported prior to the war. Some 5,000 cases were packed in the local cannery last winter; these found a ready sale in the East, but the canners do not believe there is a staple market to be depended upon after the war. From a grower's standpoint the proposition of producing this crop for canning is not particularly attractive, as they require the pods to be picked while still small, two to two and a half inches long, and pay 2½ cents at cannery for same, per pound."

Keeping Comb Honey

I have two hives of bees, the honey from which I keep through the winter and next summer to use as a substitute for sugar. The honey is all in standard comb honey sections. Will you kindly advise the best method of preparing this to keep?—El Bendito Rancho.

The best method of doing this is to store it in a dry room where the temperature is as even as possible. The best method is to pile up the supers with the sections in, placing them alternately crosswise, and raised from the floor so that there will be a circulation of air through. If shut up closely for sometime the honey is liable to mould on the surface, especially if it is a little damp. To protect from ants, place on a table the legs of which stand in cans filled with water or carbolic solution, or on shelf suspended by wires from the floor joists above.—G. A. C.

Poultry Ration

Do you advise feeding just a balanced ration to hens while moulting or have you a better formula? Would it be advisable to feed hens that are setting during the moulting season a balanced ration or a special moulting ration? Many people feed cayenne pepper in the mash during the winter. Is this advisable, and if so how much should be fed to about a dozen hens per day? I have heard that pepper fed in the mash has a tendency to start the hens to set. Is it red pepper or black pepper? — Subscriber, Redondo.

The hens do very well without change in the ration, but a little linseed oil in the mash and sunflower seed in the scratch grain are both desirable because they supply the extra protein that is needed for making feathers. Hard grain, preferably corn, is the only feed that should be given laying hens. If you connot give them Indian corn, milo or Egyptian corn will do very well. Many people do feed stimulants to increase egg production, and these things may have some effect, but remember, the use of all stimulants is followed sooner or later by depression. If your hens lay a few more eggs now because of the stimulants, they will lay fewer later on for the same reason. I think mustard flour is more highly thought of as a stimulant to egg production than cayenne, but if you ask my advice, I would leave them all alone and feed a good full ration, with plenty of greens and little green cut bone once a week as an appetizer.—J. A. K.

Amount of Honey to leave for Feed

How much honey is it necessary to leave in the super at this time of the year? Think the comb in the hive is well filled. One super also very heavy. There are a few other colonies near by in Imperial Valley alfalfa section. How late in the season can the bees make honey under Imperial Valley conditions?—Subscriber, El Centro.

This will depend largely upon the fall flow of nectar. If nothing is expected for several months, leave at least a shallow extracting super full in addition to the two outside farmes in the brood chamber, or five frames the full depth. See also that there are plenty of stores of pollen, or "bee bread" in the combs in the brood chamber, especially if nuclei are made in the fall, as there is great danger of the brood starving out for want of it. —G. A. C.

Crops Along Street

To whom do fruit or nuts belong which fall from tree on street where trees are growing inside of curb and on acreage property? Does it belong to the public or owner of property adjacent to street? — Subscriber, Santa Ana.

Presumably to the abutting property owner. Practically all acreage in California in describing metes and bounds is deeded to the center of the road, with, of course, the right of the public to use the street for road purposes. When deed is so worded there is no question as to ownership of crops along street being in the owner of the real estate. In such case any one gathering the fruits would be guilty of trespassing, though he has every right to use the road.

Worms in Lima Pods

What can be done to prevent worms in lima bean pods? I mean the kind that get in and eat the green bean.—Subscriber.

There is no satisfactory method of hindering this pest which has made itself one of commercial importance for the first time this year. Ventura has been asking itself the same question. Spraying with arsenate is about the only preventive. This is only of value when used very early in the season. Some growers have maintained torches located over pans of oil which attract the moth which are laying the eggs and when when they strike the torch, fall into the oil. It is possible that before another season more satisfactory suggestion can be given.

Potatoes to Hens

How many pounds of cooked potatoes can be fed daily to a dozen hens? Can they be made part of a hot mash? —Subscriber.

The best way to feed potatoes is to cook them and mix them into a mash with bran and other ground feed. I don't think I would try to measure them by pounds. An allowance of one medium sized potato to each bird is enough for most flocks. Potatoes are quite fattening and must not be fed too

generously to laying hens. To growing chicks give all they will consume. One Eastern expert advises cutting raw potatoes into pieces about an inch each way and feeding the chicks all they will eat from the time they are a week or ten days old. I would rather cook them myself. I don't suppose the raw potatoes would hurt the chicks but I do think it would be hard to teach them to like them. Chicks of all ages and sizes are fond of cooked potatoes, and only the laying stock need be limited in their consumption. —J. A. K.

Feed for Dairy Cows

What is the most profitable and most economic feed for dairy cows at present time? This to be fed in connection with native grass. — Subscriber.

Alfalfa hay and silage. There is now practically no concentrate which can be purchased to use so as to leave any profit to the dairyman. Hence growing of Indian corn, legumes, or other crops for silage is the only cheap way which will produce satisfactory results.

Tomatoes Not Setting

I have tomato vines that are thrifty and have been in blossom for at least a month, but have not set a tomato. About a quarter inch back of the blossom a kink forms in the stem holding the blossom and in a short time the blossom falls off, the stem parting at this kink. I kept the vines well watered until they began to blossom, but have given them none since. What is the matter?—D. J. M.

This trouble has been very prevalent this season but as yet we have been unable to discover the real reason. We understand the University of California is working on this matter but has not yet definitely reported on the subject.—D. F. R.

Pruning Raspberries

Should I cut off long unruly rasberry canes now or in January?—Subscriber, Anaheim.

Of course it goes without saying that the old unruly canes should be removed as soon as the season's crop is off. All the sap is then supplied to the young growing canes which are preparing for next year's production. For the sake of preventing spread of insects these old canes should be raked up and burned as soon as possible. Many growers follow the pinching back plan, but it is rather late in the season to secure full effectiveness from such work this year.

Income Tax Deductions

I own a tract of land in Tulare County which has not been under cultivation until the present year. Last winter I was on the place for about five months and expended over $2000 in cash in making the necessary improvements to get the place under cultivation. This expenditure consisted principally in leveling the land, boring a well, and installing a pump for irrigating purposes. Have put the land in crop from which I am to receive a share. In making returns in my income for the year how much of the amount expended in getting the place so improved that a crop could be grown and an income derived from same will I be permitted to deduct from my gross income, if any? The regular county tax has been very materially increased on account of the improvements made. — Subscriber, Bonners Ferry, Idaho.

No portion of the money used in making permanent improvements such as leveling, boring well, extending irrigation system, construction of buildings, etc., may be deducted in making your income tax return. After the ground has been levelled, the plowing necessary for the year's crop, where done by others and paid for in cash, is a deductible expense for the year; likewise moneys paid for cultivation and harvesting, hauling, and the increased county taxes. The government regards all moneys expended in permanent improvements, even in purchase of pure bred live stock for breeding purposes as permanent investment.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

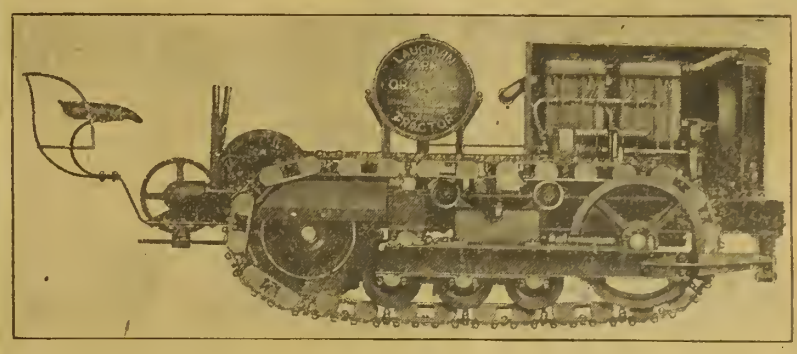
Unsigned communications receive no attention.

Abscess in Sow's Udder

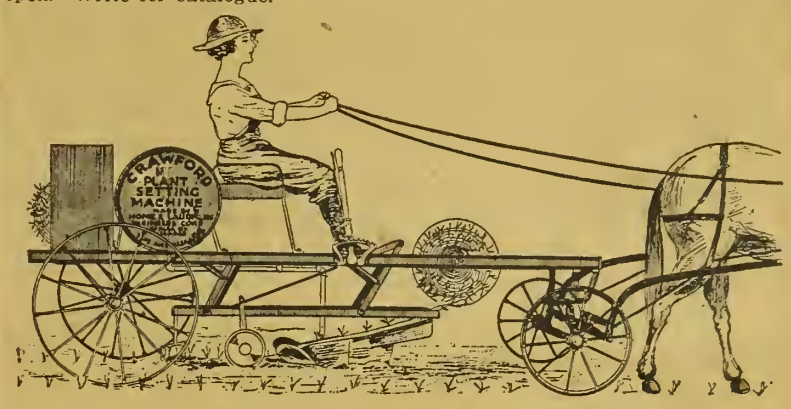
We have a sow that farrowed eleven pigs in April. After they were about five weeks old she began to dry up in her milk, lost her appetite and did not do well for some time. She is now in fine condition, has good appetite but she has constantly been troubled with a boil or carbuncle on her udder. Matter oozes out of it. The sore lasts one or two weeks then heals and another comes. The udder seems swollen. We are using a three per cent solution of iodine every three days and rub her udder with that. The government formula of mineral mixture is always in the lot where she runs. What would you recommend?—Subscriber, Santa Ana.

From your letter we judge that the abscess continues to gather in the same place. A thorn or something may have punctured the skin and broken off inside or the milk duct become closed. The next time it gathers open it just before it breaks and scrape out the cavity with a spoon. Make a large opening so it will not close before the inside is healed. Wash it out once a day with soap and warm water and wet the cavity well with a solution of permanganate of potash; one dram to the pint of water.

Get Territory on the
"Little Husky" Tractor



The "Little Husky" Tractor did all and more than wes expected at the Tractor Demonstration Southern California now has its own creeping grip tractor made entire in Los Angeles factory. The car coupler type of crawler grip demonstrated its practicability in the rough, dry, hard ground and the pulling power of the engine was thoroughly demonstrated when it pulled two 12-inch P. & O. plows, doing thoroughly successful work. Sufficient sales have been made to take our output for 60 days. Purchasers should communicate with us at once to insure prompt delivery. Dealers are wanted. We have good territory still open. Write for catalogue.



The Crawford Transplanting Machine

The Crawford Transplanter excited the keenest interest at all times. This machine that does the work of 60 men in one day, operated by one person, was pronounced the greatest implement achievement of the year. Growers of onions, beets, cabbage, cauliflower and similar products should see and know about this wonderful labor saving machine.

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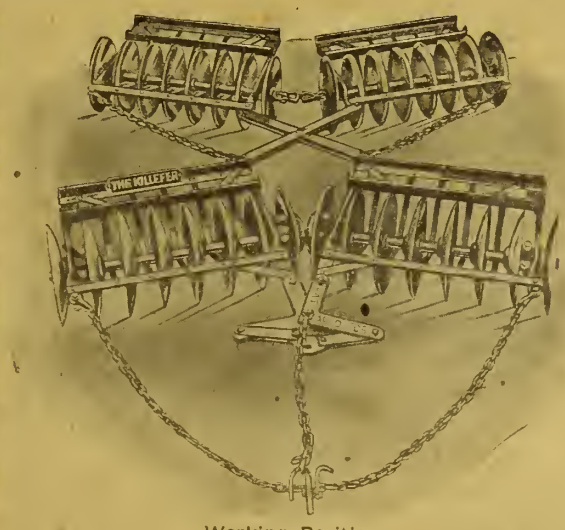
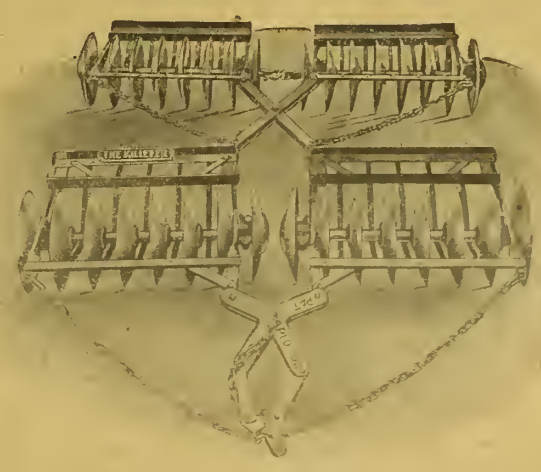
The Killefer Automatic
Double-Disc Harrow

Killefer Efficiency Killefer Quality



Working Position



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This Harrow is built in all sizes from 5 to 12 feet inclusive.

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ORDERS FOR 20 TONS UNFILLED LAST YEAR

BUY FROM THE INTRODUCER

BUY THE GENUINE "Germains"

Orders for Germain's Hairy Peruvian Alfalfa seed are pouring in. Owing to the small amount of seed raised last season the supply of the genuine, true-to-type Germain strain is extremely limited, and those who intend to plant and who fail to place orders at once, may be unable to obtain seed later on. Last season we were compelled to disappoint hundreds of patrons—and this season promises even greater disappointments.

Remember—we urge you to buy at once—no matter if you do not intend to plant until next spring, buy your seed NOW!

Results obtained by practical ranchers show an average of 2½ tons more alfalfa hay per acre with Germain's Genuine Hairy Peruvian Alfalfa than with the ordinary types.

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STANDARD OIL COMPANY (California)

RED CROWN GASOLINE

The Gasoline of Quality

State Fair Dairy Products Exhibits

Results of Scoring Contests With Comment by Prof. C. L. Roadhouse

THE California state fair dairy products exhibits which were a prominent part of the dairy exhibit at the California state fair did not quite equal the number of entries made last year in butter and cheese. The market milk and cream entries, however, were about the same in number. The entries consisted of 16 cubes of butter, 15 cheese and 76 samples of milk and cream.

The entries in the butter and cheese classes were scored by T. J. Harris, official inspector of the San Francisco Wholesale Dairy Produce Exchange, L. M. Davis of the bureau of markets, United States department of agriculture, and S. L. Denning of the dairy industry division at the University Farm.

The entries in the milk and cream classes were scored by C. F. Hoyt, milk specialist of the United States department of agriculture. W. H. Stabler of the veterinary division of the University of California, and J. C. Marquardt of the dairy industry division at the University Farm.

The competitive butter and cheese judging contest for practical creamerymen was won by M. A. Pekar of Swift & Company, Ceres.

Butter

The following are the butter entries, with scores:

Ed Hooper, San Francisco, 94.
A. Wirz, Hollister, 93½.
W. F. Butler, Visalia, 93.
M. A. Pekar, Ceres, 93.
Fred Decker, Montague, 92½.
Thos. Moran, Oakdale, 92½.
N. Nyborg, Modesto, 92.
Arnold Madson, Salinas, 92½.
C. A. Johnson, Bodega, 92.
E. L. Walker, Manchester, 92.
H. Dons, Davis, 92.
P. Peterson, Ferndale, 91½.
E. L. Dilley, Bishop, 91.
H. R. Pyke, Orland, 91.
F. L. Bellows, Reno, Nevada, 90½.

Cheese

Cheddar cheese entries with scores:

H. C. Watson, McArthur, 92; Hugh Barber, Tillamook, Oregon, 91½; J. A. Sherwood, Manchester, 91½; O. R. Lynch, Davis, 91½; A. F. Boies, Point Arena, 91; John Reber, Bieber, 90½; John Reber, McArthur, 90½; Ed Hooper, San Francisco, 90.

California cheese:

A. F. Boies, Point Arena, 94; Ed Hooper, San Francisco, 91; H. A. Kolk, Sheboygan Falls, Wisconsin, 90½; Harmony Valley Cry, Harmony, 90.

Jack or Monterey cheese: O. R. Lynch, Davis, 91½.

Certified Cream: Hollow Hill Farm, 97.3; University of California, 97.2; Adohr Stock Farm, 96.8.

Guaranteed milk—Grade A:

Los Angeles Creamery Company, 97.3; Elliott Brandt Rancho, 96.3; Danish Dairy, 94.3.

Guaranteed cream—Grade A:

Elliott Brandt Rancho, 97.5; Severn Lodge Dairy, 91.6; Peninsula Creamery, 89.2.

Market milk raw:

H. L. Wolshms, 96.8; C. P. Morse, 96.5; Crescent Creamery, 96.5.

Market milk pasteurized:

Crescent Creamery Company, 97.8; Corona Dairy, 96.2; Los Angeles Creamery Company, 95.

Milk dealers:

Excelsior Dairy Company, 95.5; Riverside Dairy, 92.3.

Dairy inspectors:

Dr. Maynard Rosenberger, chief inspector, Los Angeles, 97.3; Ray Hasson, inspector state dairy bureau, Glendale, 96.5.

Butter of Good Quality

S. L. Denning of the dairy industry division, university farm, was in charge of the butter and cheese scoring and offers the following comments:

"The average score of the 16 cubes of butter entered was 92.2. The high score was 94 and no cube scored less than 90½. Sixty-nine per cent of all entries scored 92 or above. This is a very creditable showing for the creameries of the state considering the weather conditions just preceding fair week. The small number of entries was undoubtedly due to the unsatisfactory labor conditions. Under normal conditions the liberal prizes and pro rata money offered for entries in this class should offer a large inducement for the buttermakers to enter.

The main defect in flavor was from old cream, many of the entries containing an unclean, oily or bitter flavor. A few cubes indicated that the buttermaker had attempted to improve the quality of his butter by using neutralizer.

The entries were very uniform in color and were criticized for being mottled. Several of the samples were very high in salt. The packages, as a whole, were very neat and attractive. It was interesting to note when selling this contest butter at the close of the fair that the buyers invariably picked out the neat appearing cubes when an opportunity for making a choice was given."

Bitter Flavors in Cheese

"The average score on all the cheese entered was 91.2. The entries in the cheddar class averaged 90.9 and in the California class, 91.9. The main criticism on the cheese was the bitter flavor which was very prominent. This defect may be caused by ripening the cheese at too high a temperature, for when the storage room is too warm, the ripening takes place too rapidly, especially in the softer cheese, and the bitter flavors develop. Cheese which is made from poor or inferior milk also very often shows this defect. To have good milk is essential in making good cheese."

Milk and Cream Exhibits

C. F. Hoyt, market milk specialist in the United States dairy division, Salt Lake City, Utah was in charge of the milk and cream scoring and has prepared the following statement concerning this contest:

"The market milk business seems to be coming into its own in the matter of recognition. Cash prizes amounting to $160 and 16 gold and silver medals offered by the state fair this year as prizes for the best exhibits of milk and cream show that the fair management is alive to the importance of this industry and demonstrates its interest in the production of good milk. Last year was the first time any respectable exhibit of milk was made at the fair. This year there were 76 entries, coming from many different parts of the state and even from as far East as Pennsylvania. They came in all sorts of containers, from sack-covered ice cream freezers to substantial boxes cork-lined and perfectly insulated. In the main,

the samples arrived in excellent condition.

When arrived they were rushed into a room at a cold storage plant and there kept until they were needed for examination. This examination consisted in determining the points to be allowed in quality according to the government score card, which is as follows: Bacteria, 35 points; flavor and odor, 25; sediment, 10; fat, 10; solids, not fat, 10; acidity, 5; bottle and cap, 5; total, 100.

It may be of interest to note that out of the whole number of samples only 23 had a bacteria count over 10,000, while there were 28 with a bacteria count of 1000 or less.

A feature of special interest in connection with this contest was the dairy inspectors' class. In this class a gold medal and $25 cash was offered as first prize, and a silver medal and $15 cash as second prize. An inspector's exhibit consisted of the five best exhibits from dairymen from his district or under his inspection, and his score was the average of the scores on these five samples. This class exists for the purpose of providing a practical means of comparing the quality of the milk which dairymen in any district or city can produce with that produced in other districts or cities."

Dairy Cattle at Orland Fair

Written for California Cultivator By C. A. Briggs

JERSEYS were leaders in numbers, while quality was supreme. There has never been such a show of "the cream breed" in Northern California, and "The Land of Orland" is waving the Jersey banner harder than ever. Veteran breeders from the South invaded the field and fought for honors with local men. N. H. Locke and J. E. Thorpe of Lockeford were among the victors, Thorpe winning senior and reserve champion cow, grand champion and reserve grand champion cow, Salome of Mossdale, state fair grand champion, being awarded the same honor here by Judge Rubel. Senior champion bull went to S. G. Williams of Orland, senior reserve champion bull to N. H. Locke, junior champion bull to J. A. Button of Orland, junior champion cow to Dr. H. W. Hand of Orland, reserve junior champion cow to S. G. Williams of Orland.

S. G. Williams of Orland won grand champion on bulls, the reserve grand champion going to N. H, Locke.

Awards in other classes: Bull four years and over—N. H. Locke, 1 and 2; W. G. Garnett, 3. Bull three years and under four—S. G. Williams, 1; N. S. Nelson, 2; J. Harrigher, 3. Bull two years and under three years—J. E. Thorpe, 1; Arthur Erickson, 2; S. G. Williams, 3. Bull senior yearling—J. E. Thorpe, 1; N. H. Locke, 2 and 3. Bull junior yearling—John A. Button, 1; Guy Baugher, 2; Dr. H. W. Hand, 3.

Bull senior calf—A. J. and Nellie A. Morey, 1; S. G. Williams, 2; N. H. Locke, 3. Bull junior calf—Arthur Gearhardt, 1; Arthur Erickson, 2; J. E. Thorpe, 3. Cow four years or over—J. E. Thorpe, 1 and 2; A. J. and Nellie Morey, 3. Cow three years and under four—J. E. Thorpe, 1; S. G. Williams, 2; Dr. H. W. Hand, 3. Cow two years and under three—Dr. H. W. Hand, 1; J. E. Thorpe, 2; S. G. Williams, 3. Heifer senior yearling—Morey, 1 and 3; M. Forteni, 2. Heifer junior yearling—Dr. H. W. Hand, 1; S. G. Williams, 2; G. Bougher, 3. Heifer senior calf—J. E. Thorpe, 1; S. G. Williams, 2; Morey, 3. Heifer junior calf—Morey, 1; J. E. Thorpe, 2; J. A. Button, 3. Special on junior heifer calf, S. G. Williams. Special on junior bull calf, Morey. Bull and two of his get, S. G. Williams, 1; J. E. Thorpe, 2; A. Erickson, 3. The Orland Jersey Cattle Club cup for annual contest until won by some member of the club three years in succession for the best Jersey herd of one male and three females went to Dr. H. W. Hand. Last year it was won by A. J. and Nellie A. Morey.

The J. S. Gibson Company herd of registered Holsteins from Williams made a splendid showing, winning all awards.

Official Grades on Hay

Hay grades for crop year 1918 as adopted by the Los Angeles Wholesale Hay Dealers' Association which were requested by The Southern California Sub-Committee of the Western Freight Traffic Committee of the United States Railroad administration are as follows:

ALFALFA

Choice

Shall be reasonably fine, leafy alfalfa of bright green color, properly cured, sound and well baled.

No. 1

Shall be reasonably fine, leafy alfalfa, good color; may contain two per cent of foreign grasses, excepting foxtail and needle grass; five per cent air bleached hay on outside of bale allowed. Must be sound and well baled.

Standard

Shall be of good color, coarse or medium texture. Five per cent foreign grasses and five per cent bleached hay allowed. All to be sound. Or may contain two per cent foreign grasses and 20 per cent bleached hay, all to be sound.

Choice Dairy

Shall be reasonably fine, soft, leafy alfalfa, of bright green color, properly cured, sound and well baled and cut before the bloom.

No. 1 Dairy

Shall be reasonably fine, soft, leafy alfalfa; good color; may contain two per cent of foreign grasses (excepting foxtail and needle grass), and five per cent air bleached hay on outside of bale. Must be sound and well baled and cut before the bloom.

Standard Dairy

Shall be soft, leafy alfalfa, coarse or medium texture, and may contain five per cent of foreign grasses and five per cent bleached hay, or may be same quality, free from foreign grasses but mow burned; or may contain two per cent foreign grasses and 20 per cent air bleached hay.

OAT, BARLEY AND WHEAT HAY

Choice

Shall be reasonably short, bright natural color, free from dirt, properly cured, sound, sweet and well baled, and may contain not more than five per cent of wild oat or other grain hay.

No. 1

Shall be reasonably short, good col-

DE LAVAL
Separators
Save in
7 Ways

QUANTITY of cream that no other separator will recover completely, particularly under the harder conditions of every day use.

QUALITY of cream as evidenced by De Laval butter always scoring highest in every important contest.

LABOR in every way over any gravity system, and also over any other separator, by turning easier, being simpler, easier to clean and requiring no adjustment.

TIME by hours over any gravity system, and as well over any other separator by reason of greater capacity and the same reasons that save labor.

COST since while a De Laval Cream Separator may cost a little more than a poor one to begin with, it will last from ten to twenty years, while other separators wear out and require to be replaced in from one to five years.

PROFIT in more and better cream, with less labor and effort, every time milk is put through the machine, twice a day, or 730 times a year for every year the separator lasts.

SATISFACTION which is no small consideration, and can only come from knowing you have the best separator, and being sure you are at all times accomplishing the best possible results.

Easy to prove these savings

These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency write the nearest De Laval office, as below.

DE LAVAL DAIRY SUPPLY CO.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST.
Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Acme Ensilage Cutters and Blowers, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Catalogs of any of our lines mailed upon request.

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

Sixth Semi-Annual
SALE

Kings County Poland China Breeders Association

Wednesday, Oct. 9, 1918

at Kings County Fair Grounds, Hanford, California

80 HEAD 80

Registered Poland-China Bred Sows and Gilts to be sold without reservation from the best herds in Kings County.

Consignors:

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Dimmick Bros.
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E. G. Myer

Auctioneer: Col. Ben. A. Rhoades

For information or Catalog write to F. D. Ross, Sec., Hanford, Cal.

Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, $2145 cash awards. Write to

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IT MAKES THEM FAT

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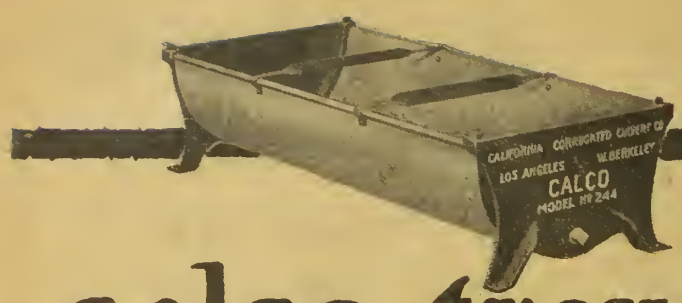

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Water and feed your hogs with Calco Sanitary troughs—don't risk the loss from deadly disease germs.

Calco troughs—with smooth metal sides and round bottoms—are absolutely sanitary. Made of rust-resisting Armco Iron and cast iron — they are strong and rigid—yet light.

Many sizes—all low priced.

Diameter	Depth	Length	Price
14 inches	7 3/16	40 inches	$5.60
14 inches	7 3/16	60 inches	6.55
14 inches	7 3/16	24 inches	4.55
14 inches	7 3/16	120 inches	9.60

Other models from 24 inches to 120 inches, priced from $2.60 up.

Your check attached to this advertisement, with name, address and size wanted will bring immediate shipment. Circular on request.

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STANISLAUS COUNTY LEADS

All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

Segis Pontiac De Kol Dutch
Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. E. E. Freeman, Rt. B. Modesto

HOLMES STOCK FARM
Registered Holsteins of best breeding. Young bulls for sale.
R. L. Holmes Modesto, Cal.

When you buy why not buy the best? We have it in Stanislaus.

Thompson's Registered Holsteins
Young bull calves for sale with yearly record backing.
Luther Thompson, Rt. A, Box 351, Modesto Cal.

Our Senior Herd Sire is KING KORNDYKE HENGERVELD ORMSBY 7th
Five of his sisters sold at public auction for $23,800, an average of $4760.
This blood has made some of the world's greatest producers.
Our junior herd sire is TOYON KING KORNDYKE SOLDENE, son of a 33.23 pound daughter of King Hengerveld Aaggie Fayne.
Young bulls for sale. No females.
REGISTERED BERKSHIRE BOARS, sons of the $1500 boar Star Leader, for sale.

Kou nias Registered Stock Farms, Modesto, Cal.

Grand Champion Boar — Grand Champion Sow

Sacramento State Fair

Berkshires

Forty-three or our litters this year averaged ten to the litter. We sell foundation sows and boars to head your herd from our easy keeping, heavy producing strains. Write to

JAMES MILLS ORCHARDS, Hamilton City, California

A single WORM infested hog in your herd is a continual menace to your hog profits.

Remove Those Worms With

SAVE YOUR HOGS ECONOMY STOCK POWDER

Send for Our FREE Sample and Book

Economy Hog and Cattle Powder Company

Hearst Bldg. San Francisco, Cal.

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

or, properly cured, sound, sweet and well baled, and may contain not more than 15 per cent wild oat or other hay. Five per cent air bleached on outside of bale allowed. Must be free from weeds and reasonably free from dirt.

Standard

May be of coarse texture, good color, clean, properly cured, sound, sweet and well baled; or medium texture, fair color, and may contain not more than 20 per cent wild oat or other grain hay. Also it may contain five per cent of foreign matter.

MIXED HAY

No. 1

May contain from 25 to 75 per cent of any two kinds of No. 1 hay. The kind of hay predominating to be used first in describing hay. Example: 75 per cent barley hay, 25 per cent alfalfa, shall be called No. 1 barley and alfalfa mixed.

Seventy-five per cent tame oat and 25 per cent barley shall be called No. 1 tame oat and barley mixed.

Standard

May contain from 25 per cent to 75 per cent of any two kinds of standard hay, the kind of hay predominating to be used first in describing hay.

WILD OAT

Choice

Shall be of medium texture, bright green color, free from dirt, properly cured, sound and well baled.

No. 1

Shall be of medium texture, bright green color, free from dirt, properly cured, sound and well baled, and may contain ten per cent foreign grasses.

Standard

May be short, poor color and may contain some stained hay and ten per cent of foreign matter.

STRAW

No. 1

Shall be reasonably clean, sound and well baled.

Standard

Shall be reasonably clean, may have some stained straw, but not good enough for No. 1.

STOCK HAY

Any hay not coming up to any of above standards shall be classed as stock hay.

These grades were adopted for the purpose of expediting the movement of cars. The members of this association will use their utmost efforts at all times to buy and sell hay on the within grading instead of by inspection, as has been the custom in the past.

It is your patriotic duty to buy and sell hay on these gradings.

Notes From the Great Glenn County Fair

Written for California Cultivator By W. S. Guilford.

IN MANY departments this fair this year exceeded the leading state fairs of the Middle West. There was a particularly strong exhibit of agricultural products and of products of communities and farm centers. The show of Jersey cattle, Duroc Jersey, Berkshire and Poland-China hogs was large in numbers and strong in quality. A lot of splendid sheep were exhibited and there were a number of good horses and ponies. The tractor and automobile show was large and varied.

And the crowds in attendance were enormous. Next year there will have to be additions to the grounds.

A company of marines maneuvered, and a marine band delighted the crowds. Aviators from Mather Field at Sacramento provided instruction and entertainment.

The open hearted hospitality of the people of Orland and the management of the fair made friends of all visitors from a distance.

Credit is due to President J. J. Flaherty, Secretary and General Manager E. J. Falk and the directors for the clever handling of all of the details of the fair.

The success of the fair this year will undoubtedly make it possible to greatly increase the prize lists for 1919. Among the changes anticipated are five money prizes in all classes and more group prizes.

C. A. Briggs, of the California Cultivator staff, who had the honor of "clerking" all of the classes in the first Orland fair three years ago, was on hand as usual—always welcome both by fair management and exhibitors.

Over 100 were shown in the baby show.

A good show of fruits was made in the horticultural department. Mrs. E. H. Guilford of Orland won the $100 Frank Freeman trophy for the best exhibit of lemons.

The agricultural exhibit was particularly good—wonderful corn, rice, beans, peas, peanuts, potatoes, carrots, beets, squash and melons being displayed.

The Sacramento Transportation Co. trophy for best rice exhibit was won by the Spalding Co. of Willows.

The L. J. Napton trophy for best exhibit by boy or girl under 12 by Ruth Parker.

Honey and bees were shown and bee culture demonstrations given every day by Supt. W. A. Saylor.

In the farm bureau center contest Bayliss won first, Ord second, Artois third. Very attractive booths were shown and a very superior lot of farm products.

The Butte City district fruit and grain trophies and the W. F. Miller & Co. special for Butte City products was won by Butte City Ranch.

L. H. Linbarger of Orland judged all of the hog classes except for the special silver trophy, which was awarded to him for the best sow of any age or breed on the grounds. This was done by Prof. J. I. Thompson of Davis. It was the opinion of everyone that the judging of all classes was fairly, carefully and conscientiously done. The placing of the awards was watched by a great many interested people and the judges explained the reasons for the awards in all classes.

The Linbarger special silver trophy for the best sow on the grounds was awarded to J. I. Thorp on the Duroc-Jersey sow Delight of Venadera.

The Horse and Pony Show

A number of very fine horses and ponies were shown.

W. E. Scearce of Orland won first and champion on his Belgian stallion; E. S. Ball of Willows first and champion on his standard bred stallion; S. W. Baugher won first on aged mare; A. J. Erickson second. Erickson won first on two-year-old colt.

F. A. Kingsbury of Orland won first on jack, first on mule colts and first on get of sire.

Butte City Ranch showed eight

ponies, winning eight firsts, two champions, the $100 River Farms trophy for best pony, the $50 Devlin trophy and the Association Silver trophy for best pony display.

Billie Ball of Willows won first on gelding under four years.

Horses and ponies were judged by J. H. Lachenmyer, an experienced judge and horse authority from Illinois.

Sheep

Interest in sheep, both in large and small flocks, is increasing in Glenn County. Through the efforts of the farm bureau 39 new small flocks have been started and many more will follow.

Registered Shropshire sheep were shown by Guilford Farm of Orland. A full flock was exhibited and all prizes awarded.

This flock won the R. A. Beland silver trophy for the best flock. This trophy must be won three times to become the property of any one breeder. It was won by Guilford Farm in 1917.

Guilford Farm won the Bank of Willows special silver trophy for the best lamb shown in Glenn County in 1918.

Ellenwood & Ramsey of Red Bluff exhibited some very fine registered and grade Corriedale sheep. This is one of the newer breeds which was originated in Australia by crossing fine and coarse wool breeds — the result being a good mutton sheep with a good fleece. One ram was exhibited that cost $550 at the recent Salt Lake ram sale.

I. A. Burrows of Newville showed a splendid lot of cross bred sheep—big strong ones with splendid fleeces.

Rambouillets were shown by McInnes of Red Bluff and Kuhn of Henleyville. The latter had champion ram.

The Hog Show

The largest live stock exhibit was in the hog department. Two big modern hog show barns were well filled with entries.

Berkshire Hogs — Although many more Berkshires should have been shown to properly represent the interests of the greatest Berkshire county in the United States, which it is claimed Glenn is, the show was of very high quality throughout. The judging was done to the satisfaction of exhibitors and ringside talent by L. H. Linbarger of Orland, an old time breeder and exhibiter of hogs.

C. E. Barrows, the expert breeder and showman, had the W. F. Sandercock hogs from Sacramento. This is a wonderful collection of animals, splendidly fitted. He won senior and grand championship honors on Winona Lee Champion 6th, first in the aged sow class and senior sow championship on Princess Leader, a daughter of the champion boar, Grand Leader 2d out of the world's champion sow Riverby Princess. Dukes Princess, a daughter of the grand champion sow at Omaha, sired by the National Swine Show champion boar, Baron Duke 201st, was junior champion sow and grand champion. This is a remarkable young animal. "Charlie" Barrows thinks she is the greatest sow in America. A special diploma was awarded to Mr. Barrows for the best fitted herd on the grounds.

Anchorage Farm of Orland had a a very attractive exhibit—pens surrounded by trees transplanted there for shade—and the pens covered with corn for shelter. The display won the Sacramento Bee trophy for most attractive hog exhibit. Anchorage Farm had the junior champion boar in Anchorage Leader 30th—a grandson of Star Leader that promises to develop into a sensational boar. This herd also won the prize for the best herd bred by exhibitor.

The Superior California Farm Lands Co. showed some very fine sows and boars in breeding condition.

The W. F. Fowler trophy was won by Butte City Ranch.

Duroc-Jerseys—There was a strong show of Durocs—three herds being represented: J. E. Thorpe, W. T. Hollingshead & Sons and Adam Lachenmeyer of Orland.

Thorpe won both grand champions, the National Duroc Association trophy for best under six months herd and the Butte City Ranch trophy for the best show of Durocs.

Hollingshead had junior champion boar and Lachenmeyer first on sow and litter.

Chester Whites were shown by Dewey Huffman of Chico.

Poland-Chinas — There was keen competition and lots of excitement in the Poland-China show.

R. J. Yates of Orland had both grand champions, Jay Cook of Paradise both junior champions.

Frank Rieman, Wesley McKaig, Al Standiford and Geo. Nygard of Orland also showed good ones.

CALIFORNIA SWINE BREEDERS' ASSN. MEETING AT ORLAND

A meeting of the California Swine Breeders Association was held Tuesday afternoon, Sept. 17, at the Anchorage Farm Berkshire exhibit at the Glenn County fair grounds at Orland.

President C. B. Cunningham of Mills spoke of the need of the nation for pork and of the opportunity now presented for the organization of the livestock interests of the state.

Prof. J. I. Thompson, secretary, and Frank B. Anderson, director of the association and breeder of Berkshires at Sacramento, also spoke.

In order that this association may be of the greatest possible use to the hog producers of the state, it is necessary to have a large number of members. An active campaign for this is to be conducted in all parts of the state. Director W. S. Guilford will preside at a meeting at the Water Users' office Saturday evening, Sept. 28, 1918.

CLOSE SILO TIGHT TO PREVENT SPOILAGE

Several methods of closing the silo until the feeding period begins are in use. The blanket that is to keep the top layer from spoiling should be heavy and moist to shut out the air. Quite often weeds are run through the cutter as a finishing layer, or the last few loads of corn stalks from which the ears have been jerked may be used. In the latter case no grain would be lost. If spoilage is to be prevented entirely use tar paper. A single thickness cut to fit snugly over the top of the silage will exclude the air effectively and keep the silage in good condition for many months.

At intervals of two or three days for a period of two weeks or more, it will be advisable to tramp the silage around the edges. As the mass settles it draws away from the sides of the silo. If the silo is not yet filled, this difficulty may be prevented to some extent by changing the form of the surface layer as the mass nears the top. Where the surface is kept saucer shaped at first, it should be gradually changed into an inverted saucer by the time the silo is full.

The immediate use of silage is not recommended. If not allowed to stand for at least ten days, the mass is neither green corn nor ensilage, and cattle do not relish it. A period longer than this is desirable.

COW WON

An official of the board of health in a Massachusetts town notified a citizen that his license to keep a cow on his premises had expired. In reply to this letter the official received the following communication:

"Monsieur Bord of Helt.—I just get your notis that my licens to keep my cow has expire. I wish to inform you, M'sieur Bord of Helt, that my cow she beat you to it—she expire t'ree weeks ago. Much oblige. Yours with respek.—Ex.

A number of Angus cattle have been bought in California, and future state fairs should see more herds on exhibit.

Success in small things was never the mother of failure in large things.

Look! Look! Look!

A great herd of registered Holsteins that you can buy at your own price.

90 Head 90 Head 90

W. H. Ginn & Son Herd

Corcoran, California

At Public Auction

Thursday, October, 10, 1918

Fresh Cows Heavy Springers Bred Heifers
Unbred Heifers Heifer Calves Young Bulls

This is a herd of very desirable breeding, and of equally desirable type. The herd is especially desirable in that it contains two large groups of heifers by two high class sires, affording a rare opportunity for the purchase of foundation herds of heifers by one sire. These two groups are composed of TWENTY-FOUR DAUGHTERS OF MERCY SIR PONDYKE, who is by one of the best sons of King of the Pontiacs and out of a 23 pound dam, and TWENTY-FIVE DAUGHTERS OF ARALIA DE KOL PONTIAC SALAMBO, who is by a son of Aralia De Kol and out of the best daughters of King Mead of Riverside.

These two groups comprise a heifer herd of a quality not often found in a herd of this size, and they are worthy the attention of any buyer.

ARALIA DE KOL PONTIAC SALAMBO will be sold. He is three and one-half years old, just a young bull, mostly white in color and a long bodied fellow, and a great breeder. Just look at his 25 daughters in this sale and see the sort he is siring. An outline of his blood lines is given above. His three nearest dams average 610.3 pounds milk and 30.26 pounds butter in seven days, including the four year old record of his dam, and 24,158.2 pounds milk and 1031.86 pounds butter in one year. His dam recently completed a yearly record of 22,097.8 pounds milk and 950 pounds butter in the Morris herd. Remember also that 34 cows and heifers in this sale are bred to him.

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Every animal guaranteed to be a breeder. Every animal tuberculin tested and sold subject to tuberculin retest except a few of the older cows that will be sold exactly as represented on sale day.

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(2)

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We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

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Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

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Field Notes from the Live Stock Men

Nadgy Korndyke Moole 3d, a junior two year old registered Holstein heifer owned by J. H. Harlan Company, Woodland, promises to become the state record producer in her class for butter in one year. In 189 days she has made 549.18 pounds butter from 10426.7 pounds milk, average test 4.22 per cent. She is a daughter of King Mead of Riverside, the only sire of the Holstein breed all of whose daughters have averaged over four per cent butter fat on yearly test.

Tilly Alcartra now promises to make a really sensational record this year. At the end of 240 days she has over 23,960 pounds of milk to her credit and is milking right around 90 pounds per day. If she averages 74 pounds per day for the next 125 days she will finish her year with over 33,000 pounds milk, and from her past performances she is capable of making that average. At present she is beating the corresponding days of her former world's record by 15 to 20 pounds. She also promises to make right around 1300 pounds butter. Her ration this year is highly interesting, differing somewhat from that of former years. She is not receiving an ounce over 16 pounds of grain daily and is turned out on pasture every day. Tilly is now carrying her seventh calf, and has never been rebred but once in her life, that being last year. Certainly long time testing has not impaired her breeding powers, and physically she is at the present time in the finest kind of condition. She has taken on considerable weight as she usually does along in her lactation period, and her coat has that silky appearance that goes with good health. Her udder is a marvel, showing not a trace of becoming misshapen or broken down, although through it has passed in five years and eight months of continuous testing, over 147,000 pounds of milk. She is safe with calf to Sir Aaggie De Kol Acme, son of the world's official yearly record cow Aaggie Acme of Riverside 2nd.

J. M. Campbell, Escalon, made his start in official testing of his registered Holsteins by putting a record of 27.89 pounds butter in seven days on his show cow Potoki Johanna 2nd, who is an individual of very high excellence. She is safe in calf to a 29 pound son of Prince Gelsche Walker and will be sold in the Second Modesto Sale, October 17.

Luther Thompson, Modesto, also made good at his first attempt at official testing, making a record of 23.06 pounds butter in seven days on the senior four year old Dora Hengerveld of Sylvan Iris. She too will be in the second Modesto sale, bred to the great young sire Sir Chimacum Wayne Woodcrest, whose dam is a 29.81 pound three year old.

The Second Modesto Sale of registered Holsteins, to be held at Modesto on Thursday, October 17, will contain the largest number of cattle and the highest record cows and bulls ever offered at that place. Owing to the small number of registered Holsteins for sale around Modesto, and the small number from the breeders who usually consign to Sacramento, it was decided to combine the consignments into one sale at Modesto. There will probably not be over 80 head in this sale, and there will be no regular October sale at Sacramento.

A. W. Morris & Sons Corporation, Woodland, will sell 100 head of registered Holsteins on their farm at public auction on November 12. The offering will consist of 85 cows and 15 bulls, every animal sold guaranteed to be a breeder.

The annual meeting of California Holstein-Friesian Association was held on the State Fair Grounds the evening of September 3. Officers and directors for the coming year were elected as follows: President, Fred W. Kiesel, Sacramento; first vice president, De Lancey Lewis, San Jose; second vice president, Harry V. Bridgford, Knightsen; secretary-treasurer, C. L. Hughes, Sacramento; Frank L. Morris, Woodland; Gion W. Gibson, Williams; J. M. Henderson, Jr., Sacramento; A. R. Magruder, Ripon; Frank M. Helm, Fresno; W. J. Higdon, Tulare; James W. McAlister, Jr., Chino; W. H. Taylor, Santa Ana; A. J. Stalder, Riverside; W. F. Holt, Van Nuys; Owen Duffy, Napa; R. F. Fisher, Carlotta. A gain of 23 new members was reported by the secretary during the past year.

Prince Gelsche Walker figured prominently in the winnings at this year's state fair. One son and a number of grandsons and granddaughters in various herds won one first, four seconds, two thirds, one fourth, three fifths, and two reserve championships in the individual classes, and his grandsons and granddaughters figured prominently in first prize breeder's young herd, second prize in get of sire, and first prize produce of dam. Thus does he prove his ability to transmit show quality as well as world's record production.

Santa Anita Rancho, owned by Anita M. Baldwin, Santa Anita, is keeping well cleaned up on bulls from the splendid herd of registered Holsteins. Several good sales recently took almost everything of service age, with some fine calves coming on. There are many judges who consider that Merci Lad Korndyke Burke, the senior herd sire at Santa Anita, would be about the toughest nut to crack that has appeared in a California show ring should he come out. The splendid type of his calves is in no small way responsible for the ready sale of bulls at Santa Anita. Superintendent W. H. Taylor has been missed at many of the Holstein gatherings during the past year, for the big ranch has claimed close attention in the production of the enormous crops of this year.

Two thousand hogs will be marketed this year by the James Mills Corporation of Hamilton City. Plans for next year contemplate the raising and marketing of not less than 5000 head. Between 400 and 500 sows are now being bred. Average litters for 1918 were nine and eight-tenths to the litter.

Prof. J. I. Thompson, University Farm, Davis, is one great picker when it comes to hogs. It will be remembered that he bought the Berkshire pig Star Leader from A. B. Humphrey at the P. P. I. E. before the hogs were judged, and the now famous boar stepped out and won the junior championship and reserve grand championship, afterward selling for $1000 to Anchorage Farm, Orland. At the state fair last week "Tommie" pulled another similar stunt. D. O. Brant, of Elliott-Brant Rancho, Owensmouth, happened along with an eye out for a good young Duroc boar and went to J. I. for a little advice. Did he get it? He did. He was promptly taken over to the pen where Uneeda Model

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Colonel 3d was quietly snoozing in the exhibit of H. P. Slocum & Son, Willows. Yes, Mr. Slocum would price him, and he was no sooner priced than he was sold to Mr. Brant. When judging day came Uneeda Model Colonel 3d never faltered in reaching the junior championship, and Slocum himself concedes that he is a $1000 pig.

The Red Cross Auction at California State Fair proved to be a most successful affair. Breeders and others had contributed of their best and when Governor William D. Stevens mounted the block he found appreciative bidders right from the start. After the bidding was well under way the governor introduced Col. Ben A. Rhoades as a friend of 25 years, and the colonel then proceeded to extract the money in his happiest manner. The idea of the sale, which netted $2529 for the Red Cross, originated with Chas. W. Paine, secretary of the State Agricultural Society, and the popular secretary found ready response when it became known that such a sale was contemplated. C. L. Hughes, Sacramento, attended to the management details of the sale.

Interesting News to California Horsemen

By Wayne Dinsmore

Breeders of Percherons in California and those who contemplate going into the raising of this particular breed of purebred draft horses should be particularly interested to know that the majority of the stallions that are produced and sold in the Corn Belt states go to Northwestern Canada, Washington, Oregon, Idaho, Montana, Wyoming, Colorado and the Dakotas. Interest in draft horses in this part of North America has been increasing rapidly in the last two years. Reports coming from the leading horsemen in those sections indicate that more such horses will be sold there in the next year than ever before. This is to be expected because crops are promising throughout the West this season and farmers realize the need of heavier horses. They will have them, too, if the seasons are only favorable so that grain can be produced. Every good crop season west of the Missouri River means an increased trade in draft horses, especially stallions. California breeders who have colts to sell will do well to take good care of them. Let the stallion dealers of those states that are buying such horses most heavily know what kind of stock is to be had.

There will be no trouble in selling all surplus colts available if they have been properly grown out.

America is at the beginning of a new era in horse breeding. Draft horses will command higher prices in this country in the next few years than ever before. The high price of feeds and the scarcity of man labor throughout the Corn Belt states have curtailed horse breeding to a considerable extent. The West, with its extensive pastures providing comparatively cheap feeds, has a great chance now to step in and raise draft horses and have them ready for the market when the war is over. The Central or Eastern states will have no surplus horses, — not even enough to work their own land most effectively. The European people say "America should do everything in her power to keep up draft horse production during the war, for we will need horses and lots of them to build up our agriculture after hostilities cease."

The building of American ships as a war measure will, after the war, place us in a position to take first rank in ocean production and transportation.

Lady Mead Salambo

Recently completed yearly record of 22,097.8 pounds milk and 950 pounds butter. Owned by A. W. Morris & Sons, Woodland.

ANOTHER HIGH RECORD DAUGHTER FOR KING MEAD OF RIVERSIDE

Lady Mead Salambo, owned by A. W. Morris & Sons, Woodland, recently completed a year's record of 22,097.8 pounds milk and an even 950 pounds butter. She is sired by King Mead of Riverside and is out of Pet Salambo of Riverside who made 22,287 pounds milk and 1003.28 pounds butter in one year. Her full brother, King Riverside Mead, sold in the guaranty sale last December at the age of six months for $1000 to A. B. Comfort, Guernsey, in whose herd he is now in service. Her son, Aralia De Kol Pontiac Salambo, by Aralia De Kol Pontiac Segis, son of Aralia De Kol, heads the W. H. Ginn & Son herd at Corcoran, and will be sold in their dispersal sale on October 10, together with 25 of his daughters and 34 cows and heifers in calf to him.

High Record Show Cows High Record Show Bulls
Richly Bred Heifers and Cows Bred to 29, 30 and 40 Pound Sires

Second Modesto Sale

65 REGISTERED HOLSTEINS 65

Modesto, California, Thursday, October 17, 1918

CONTRIBUTORS:

BRIDGFORD COMPANY, Knightsen. C. G. OUTLAND, Modesto
LUTHER THOMPSON, Modesto. R. L. HOLMES, Modesto.
J. S. GIBSON CO., Williams. J. M. CAMPBELL, Escalon.

Including the complete dispersal of the C. G. Outland herd, and the sale of all of Luther Thompson's cattle of milking age, with high class consignments from the other four well known breeders. Among the females are:

A DAUGHTER OF KING KORNDYKE SADIE VALE.
TWELVE DAUGHTERS OF HERMANA IGNARO, who is by a son of Ignaro De Kol, the only sire that has nine daughters above 20,000 pounds milk in one year.
A DAUGHTER OF THE 44 POUND $15,000 BULL, Spring Farm Pontiac Cornucopia, due to calve November 8 to King Segis Alcartra Prilly, twice grand champion bull at California state fair. The four nearest dams of this heifer average 33.80 pounds butter in seven days.
POTOKI JOHANNA 2ND, 27.86 pounds butter in seven days, a real show cow bred to a 29 pound son of Prince Gelsche Walker.
A DAUGHTER OF PRINCE GELSCHE WALKER, that made 577.8 pounds butter in one year as a junior two year old.
DORA HENGERVELD OF SYLVAN IRIS, 23.06 pounds butter in seven days as a senior four year old, bred to a 29 pound bull.
A 25.01 POUND COW that made 18,362.3 pounds milk and 814.23 pounds butter in one year, now fresh.
A 24.38 POUND COW heavy with calf to King Segis Alcartra Abbekerk, 30 pound son of the $50,000 bull.
A 20 POUND COW that made 644.09 pounds butter in 320 days, heavy with calf to Prince Alcartra Korndyke, son of Tilly Alcartra.
A 21.90 POUND THREE YEAR OLD daughter of Spring Farm King Pontiac, heavy with calf to the twice grand champion bull, King Segis Alcartra Prilly
AND MANY OTHERS of splendid type and breeding, bred to 29, 30, and 40 pound bulls.

BULLS

A 30 POUND BULL, two 29 pound bulls, a 25 pound bull, and others of rich breeding, including several nice calves make up a high class bull offering.

Catalog in preparation. Write for one.

Management
California Breeders Sales and Pedigree Company
J. M. Henderson, Jr., President C. L. Hughes, Sales Manager
Sacramento, California.
Auctioneers—Col. Ben A. Rhoades; Col. Cy N. Clark.

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The largest collection of high class Stallions west of the Rocky Mountains.

Prize winners at this year's big Eastern shows. Life Insurance and State Certificate of Soundness furnished with every horse. If in need of a really high class Stallion come and inspect my horses or write for full particulars. I can suit you in price, quality, and terms.

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Citrus Trees — All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park, California.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

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RANCH TOOLS — 1, 2, 3, 4 gang disc and moldboards; plows, fine shape; 30 spike tooth harrows, some new; 4 Killefer cultivators; 4-horse power gear, $40; brand new John Deere alfalfa cultivator, cost $120 new, our price $85; double 32-disc harrow, $78, cost $200. New fanning mill hand or power, $39. Not everything but everything we advertise.
TANKS, TANKS—We do not advertise "by far the biggest lot of junk" in the city, but real tanks. New, used redwood and galv. tanks for less; 4500-gal. heavy galv. with top, $95; 6000-gal. galv., $120; 8000 heavy galv., $140; 25,000-gal, redwood, $135. DEMMITT CO., office 120 N. Main. Upstairs. Yards, 816 Yale. Also buy serviceable material.

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For Sale, Holt Caterpillar Model 18. Has been entirely rebuilt by the Holt Mfg. Co. For information or demonstration phone owner, G. F. Blackwood, Glendora, or Holt Mfg. Co., Los Angeles. Might take good team as part payment but nothing else.

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For Sale—Almost new 5 ft. mower used one year and Little Giant potato digger. August Peukert, 79th St. and Towne Ave., Los Angeles. Phone South 6605-J.

WANTED

Wanted: Experienced Rancher to take charge of and operate a fruit and alfalfa ranch at his expense and take all crops for a period of time and eventually get a certain interest in matured orchard. We furnish a well, machinery, stocked (80) eighty acre ranch, you operate it. Ranch has 40 acres in apples and pears, some cherries, peaches and plums, 10 acres alfalfa all fenced, 2 pumping plants, cement irrigating pipe, water tank, house, barn, 5 miles from Victorville. Trees, 2, 3 and 4 years old, apricot and peach trees bearing, chance of a life time for party with a little money, experience and ambition, this is a square deal and we will verify the above. Bueneman Ranch, 901 East 8th St., Los Angeles, California.

Wanted to Rent farm in S. S. Joaquin Irrigation District, 80 to 100 acres free from alkali, at least 30 acres under irrigation (ditched and checked) remainder may be partly orchard, partly suitable for beans, etc. Preferred with buildings and implements State terms, distance from R. R. and town. Alfred Hersly, 6439 Minerva Ave., Chicago, Illinois.

Wanted November 1st on modern dairy farm position as manager, cattle department, thoroughly experienced and efficient in every branch of cattle management, calf raising, A. R. work, life time experience, best reference. Only high class pure bred proposition considered. American family. Address H, Care Cultivator.

Wanted — Reliable tenant or sell property cheap; small dairy and poultry business with stock for sale. Market for everything also adjoining feed and fuel business. Separate or together. Must retire having other property to look after. Small capital required. Address Feed and Fuel Yard, Hermosa Beach, California.

Wanted—To Rent a dairy farm with cows and equipment. Must be good proposition and up to date methods used, where man of experience can show ability. Address "Dairyman," care Cultivator.

Wanted — Opportunity to produce food under rental or salary. Born on farm. S. E. C., California Cultivator, Los Angeles.

Herdsman Wanted—Single man preferred. Could use a married man with small family. M., care Cultivator.

Want to Hear From Owner of Farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

PIPE

Surface Irrigation Pipe
for sale; 10 foot lengths, 20 guage, 10 and 11 inch, new, at substantial reduction; have 7000 feet. Address Ramsey Probasco, 2436 Virginia Street, Berkeley, California.

"TESTED" and "GUARANTEED"
Screw pipe, casing, valves and fittings. Riveted slip joint pipe; all sizes. New and used. "Pacific" pipe for all purposes.
PACIFIC PIPE CO.,
Main and Howard Sts., Est. 1906, San Francisco.

HOGS

BERKSHIRES GUERNSEYS
GRAPE WILD FARMS
A few fall boars left by Royal Superbus —also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
A. B. HUMPHREY,
Escalon, San Joaquin County, California.

Poland-Chinas — Will book a few more orders for May and June delivery, weaning boar pigs out of my best outstanding money making, easy keeping sows, sired by Model Major, first prize winner at Sacramento State Fair 1916 and sire of the 1917 State Fair grand champion or I. B. A. Wonder reserve grand champion at the Panama Pacific International Exposition at San Francisco. Hale L. Marsh, Modesto, California.

Get a Golden Sunset Duroc—Jr. Yearling, Cherry King show boar, ready to drive before the judge. Sired by a twice grand champion, Cherry color—bone 9½ inch, height 35½ inch., length 66 inch, girth 64 inch. Priced to sell. Also Spring boars and gilts. O. M. Trotter, P. O. B. 524 Artesia, New Mexico.

Superba, World's Grand Champion Poland-China boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, California.

We Pay Cash for Hogs of All Sizes, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170. 3030 E. Vernon Ave., South 2712-J. Los Angeles.

Rancho Rubio Durocs—Thirty of the finest fall gilts we ever raised. Will begin breeding May 10. Write for prices and pedigrees. Some splendid weaned boar pigs for $25.00. Elmer Lamb, Ceres, California.

"Billiken" Chesters; Service Boars—If you are needing a boar this fall now is the time to buy. Few bred sows due to farrow in October. Open fall gilts; few weaned boar pigs. C. B. Cunningham, Mills, California.

Mule Foot Hogs, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California, "The Blue Gums."

Hog Sale Called Off—The demand is so great for our stock we shall sell at private sale and call sale off advertised for October 2nd. Jersey Queen Farm, San Jose, California.

For Sale — Registered Berkshire pigs sired by Lord Premier's Successor 11th. J. Pringle, at Oak Crest, Cahuenga Pass, R. D. 10, Box 864, Los Angeles. Holly. 14R3.

Castleview Berkshires are the typey, modern, quick-growing kind, choicest blood lines. Prices reasonable. Castleview Ranch, Berkshires exclusively, Santa Rosa.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

Poland-Chinas—A limited number sows, bred to our great boar Model Wonder, big type, straight and right. Dimmick Brothers, Lemoore, California.

Fine big smoothe Poland-China boars and gilts $20.00. Registered and crated f. o. b. Live Oak, California. A. J. Stohlman.

Duroc-Jerseys — We breed the champions. Peters, Lamson & Walker, Devore, San Bernardino County, California.

Greenwood Farm Durocs — "Size with Quality." H. C. Witherow, Palo Cedro, California.

HEWITT'S BIG TYPE POLAND-CHINA gilts and boar pigs. Hewitt & Hewitt, Dixon, California.

Registered Durocs of the big type—Cholera immune. Derryfield Farm. Odd Fellows Building, Sacramento, California.

Carruthers' Farm Berkshire Hogs—Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition, Mayfield, California.

For Sale—Three Duroc boars subject to register. Amos S. Kingsley, Westmoreland, P. O. Brawley, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Orland, California.

REGISTERED BERKSHIRES. FAIR OAKS RANCH, WILLITS, CALIF.

BIG TYPE POLANDS
W. H. BROWNING, WOODLAND, CAL.

MISCELLANEOUS

For Sale — $2500.00 buys a 30x100 foot greenhouse, latest type; top and side ventilators, heavy redwood benches; also large lath houses; hot bed sash; acre of fine soil. Situated in thriving town of thirty thousand inhabitants. Excellent market. Expenses light, very little fuel required Sale terms to suit or will lease. TUCSON SEED & FLORAL CO., Tucson, Arizona.

100 Printed Envelopes 50c. Send the wording you want printed together with your order and envelopes will be mailed prepaid, also a full line of letterhead samples. Frank E. Brown, 1377 Palm Terrace, Pasadena, California.

To Reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco

GOATS

Toggenburg Milch Goats — Rae P. Williams, Federal Realty Building, Oakland, California.

LUMBER

Lumber-Sash-Doors-Plumbing - Supplies —Building materials of all kinds. New and second hand "A"R.W. shingles 60c per bundle. Send list for estimates. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco.

CATTLE

SHORTHORN CATTLE, SHROPSHIRE SHEEP. Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., California. W. P. Dwyer and W. S. Guilford, Owners.

For Sale—20 head first class Registered Jerseys, cows and heifers, the oldest being five years. Address Box 907, San Diego.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, California.

Registered Shorthorns (beef) calves and yearlings for sale. Both sexes, reds and roans. Choice goods breeding. Fair Oaks Ranch, Willits, California.

Ayrshires (registered) — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

Jersey Bulls and bull calves. Good individuals from producers. Write or come and select. N. H. Locke Co., Lockeford, California.

Elkhorn Farm Ayrshires—For sale young bulls of exceptional breeding and individuality. J. Henry Meyer, R. D. 2, Box 82, Watsonville, California.

For Sale — Polled Herefords; cows with sucking calves and with calf; and yearling bulls. Gay Owen, Calipatria, Imperial County, California.

Sunshine Farm Jerseys — Young bull, ready for light service, for sale. E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

REGISTERED JERSEYS FOR SALE. J. R. CARHART, FULLERTON, CAL.

POULTRY

Fall Chicks For Sale—400,000 S. C. White Leghorn chicks from free range Hoganized stock only, for delivery from July to December, at very reasonable prices. Fall chicks are most profitable—broilers in ten weeks, pullets lay at five months. We guarantee safe delivery of all chicks to destination. Shipped safely anywhere West of the Rockies. No money in advance, pay on delivery. Special prices on 500 and 1000 lots. Finest hatchery in the world. Established over twenty years. Further information write Must Hatch Incubator Company, 424 Seventh Street, Petaluma, California.

Feed High; Eggs, Meat Higher! Our 200-290 egg Leghorns, Anconas, Reds, Rocks, Wyandottes, Minorcas, ducks are more profitable now, clearing $5.00. Some greatest government trapnested hens, 280-283. Hundreds breeders, laying, younger pullets; thousands chicks weekly; reasonable, fine males $1.00 up, worth treble. James Beeson, Pasadena, California.

White Leghorn Baby Chicks—Put in a lot of baby chicks this fall. Help out the food situation. Make some money, buy some Liberty Bonds, give the hatchery man a chance to buy some bonds also. We guarantee our chicks to be first class. Lyon Hatchery, Gardena, one-quarter mile east of harbor boulevard on Palm Avenue.

"Eastman's Bred-to-lay" Hoganized and trapnested Barred Plymouth Rocks. September chicks, eggs, cockerels. Fairmead Poultry Farm, Fairmead, California.

White Leghorn Baby Chix from heavy laying (Hoganized) stock. $14.00 per 100. We guarantee safe arrival. The Pioneer Hatchery, 409 Sixth St., Petaluma, California.

Fall Chicks — Book order now for your future meat and egg supply. Write for special circular on fall chicks. Stubbe Poultry Ranch and Hatchery, Palo Alto, California.

Chix—Barred Rocks, R. I. Reds, Orpingtons, Anconas, Minorcas, Buff, White and Brown Leghorns. Breeding Cockerels. Enoch Crews, Seabright, California.

C. L. McGee's Houdans, Langshans, Wyandottes, Orpingtons, Rocks, Reds, chicks, eggs, cockerels. S. Berkeley, California.

Black Orpingtons Lay, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, Cal.

FOR LEASE

Orchard In Bearing For Rent—50 acres apples, 50 acres Bartlett pears, 30 acres bean land. 600 acres grazing land near Paradise, Butte Co., California, within the Paradise Irrigation District, one mile from R. R. station. Address Dr. C. A. Oliver, Chico, California.

To Lease—On shares. Large dairy and grain farm. Box 175, Tipton, Tulare Co., California.

LIVE STOCK

For Sale — Two Belgian horses, 4 years old; 1700 weight, well broken. Case Tractor, 9 horse power, virtually new; mould-board plow. Inquire K. C. Henderson, Capitola, California.

For Sale—7 head of well broken Norman horses weighing from 1500 to 1700 pounds with harness complete at reasonable prices. Apply or write to L. M. Edwards, Wheatland, California

For Sale—Beautiful pure bred Belgian mare. Valuable and sure foal getter. For information apply to S. D., Rt. 1, Box 24, Buena Park.

300 Head Sheep for sale. All young and bred for December. Also dogs for herding. John G. Mee, St. Helena, California.

ENGINES

Several New and Slightly Used Engines. ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles

DUCKS

GOVERNMENT LANDS

Oregon, California Government Lands — Booklet free. Tells "How, Why, Where." Write Joseph Clark, Sacramento.

SEEDS AND PLANTS

Early Amber Sorghum makes the best silage and produces the greatest tonnage per acre. Recleaned seed 9c per pound f. o. b. Stockton. Fancy recleaned Sudan seed at 18c per pound f. o. b. Stockton. In lots to suit. Aurora Seed Mill, 48 N. Aurora St., Stockton, California.

Seed Grain — We can make attractive prices on seed wheat and Winter or Gray oats and other field seeds. Have a full line of nursery stock. Supply of seed grain will be limited. Write now. 28 years in business. Carlton Nurseries, Carlton, Oregon.

50,000 Yellow Calla Elliottiana Bulbs. William Richard, 438 River St., Santa Cruz, California.

Peruvian and Common Alfalfa Seed—Specialty. Write for prices and sample. Box 501. Fowler, California.

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MORE POWER, MORE FOOD

Continued from Page 306

possible discount additional is a handicap which prevents most economical service. The government has taken a hand in financing the seed buyer, also the irrigator on some of Uncle Sam's lands, and it may be that he can some day arrange similar financing of the farm power purchaser. We hope not, however, but rather that cheap money may yet be arranged by the farmer's banker.

The photographs which the Cultivator camera has so liberally provided are most educational and show the intense interest on the part of the attendants. But one scene which we tried to photograph several times we failed to secure. That was the afternoon demonstration. Thousands of people watching and following closely every one of the tractors, with dust almost suffocating, presented a most lively scene, but the dust and the great distance over which the demonstration was spread prevented showing this satisfactorily even in panorama.

This was the third demonstration of the Traction Engine and Implement Dealers' Association of Southern California, the last two under the management of R. M. O'Neil. The first was held on a tract of land near El Monte, with an attendance of 25,000; the 1917 meet in the Eastern outskirts of Los Angeles, with an attendance of approximately 75,000; while this one, on the fields of La Brea Rancho just west of the city of Los Angeles, showed an attendance far greater than the total of both of the others. Of course there were no gate receipts and people came and went as they pleased, but estimating from number of autos and short period counts, there were approximately 150,000 people at this demonstration.

The officers of the association are; President, O. H. Stevens; vice president, H. L. Marsh; treasurer, Alex McCluskey; secretary and manager, R. M. O'Neil; directors, O. H. Stevens, Alex. McCluskey, W. S. Gregory, F. Johnson, R. Dunsmore.

DEMONSTRATION NOTES

It is surprising the number and diversity of exhibits which are gathered at these great demonstrations. Of course the tractors and implements occupy the great outdoors. In the big tent, however, there were pumps and irrigation supplies, electrical exhibits almost without number, pianos, washing machines, trncks, seeds and plants, of course oils and greases of all kinds, air cleaners, springs, shock absorbers, autos, tires, show cases, trailers, seed wheat, power saws, carburetors, and even an airplane company occupied prominent position.

The Homer Laughlin Engineers' Corporation exhibited the Crawford plant setting machine. This machine handles plants which have previously been placed between strips of paper, which, in the form of a long tape runs off a reel into a prepared opening in the ground where a small quantity of water is injected around the roots, the dirt automatically pressed, or firmed, around roots. The manufacturers say that this machine will do the work of 60 men.

The Southern California Wrecking Company sounds hardly like a constructive force, but its exhibit gave many suggestions of economy in construction. In trucks, the big tent contained the White, the Kleiber, Giant, Dearborn, Garford, U. S., Moreland, and Bethlehem.

The Smith-Booth-Usher people with Uniflow Pumps had an instructive exhibit for the irrigator.

The ease of lighting the home in remote sections was shown in the Lalley-Light Electric Booth.

The Delco Light people had a striking electric lighted booth.

Aggeler and Musser's Seed and Plant Booth kept a number of salesmen busy explaining the needs of the coming season's planting.

The Hauser Packing Co. maintained that it was not only necessary to give deep culture to the soil but to supply the plant food necessary. Their plant food exhibit was convincing.

The Fairbanks Morse exhibit of irrigation supplies and general machinery occupied place in the biggest general exhibit tent.

The Wade Portable Drag Saw was busy taking off slices from the big log.

The most satisfactory water measuring device or weir gauge was exhibited by P. W. Sparling.

The Ensign Carburetor had its merits explained. This appliance is coming into general use on truck and tractor.

Of course, the Standard Oil was present with a fine exhibit in the center of the big tent, and its delivery truck was everywhere needed, supplying gas, distillate, oils, and Zerolene.

The Norwalk Tire folks had a convincing exhibit, one feature of which was a finished tire which had cut from it a strip of casing a couple of feet in length, and the freshness and purity of the rubber were shown by an attachment which continually stretched and relaxed this strip.

The Garford people made a showing of the power of one of their larger trucks by hauling a gang of 12 subsoilers in hard 'dobe soil.

A "More Food" campaign was conducted by the Sperry Flour Company, whose exhibit of Baart wheat and placards over the grounds calling attention to the necessity for greater wheat production should result in a materially increased wheat crop this year. Hangers about there were: "Plant More Wheat. Sperry Flour Company can help you. You can help your country. Plant Better Wheat."

One of the most powerful machines on the ground was the Haskins Trench Digger. It had the general appearance of two monster tractors, one acting as anchor and propeller for the ditching machine proper. The ditcher, which may be used as dredger, tiling machine, or for general excavating, showed a liking for eating into the hard 'dobe soil a trench two feet wide and five feet deep.

Tractor girls were numerous, both as representatives of some of the tractor companies and as visitors. The peg-top with leggins and long khaki coat proves attractive.

In the absence of an orchard, in order to demonstrate ability to cultivate close to trees, the Bean Tractor people secured a supply of potted trees which made a most realistic orchard scene.

The Beeman gas propelled hand cultivator bravely tore into the 'dobe and showed its power to give perfect tilth to the garden where conditions are not the best.

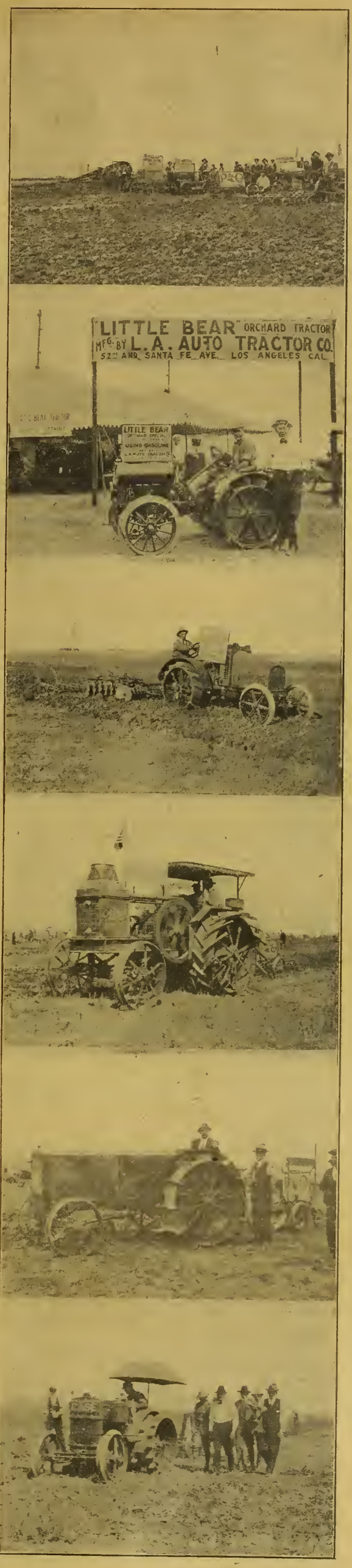
The Avery people had a long string of tractors and showed several sizes, in fact, the Avery people say: "There is a size Avery tractor to fit every size farm." Its flexibility was graphically shown in its climb over immense obstructions.

The A. F. George Company exhibited a long line of John Deere plows, harrows, and soil working tools and of course all sizes of the Yuba tractor.

The Whyman Machinery Co., of Phoenix, Arizona, placed an order for a carload of Killefer's new Automatic Discs, shown for the first time at the tractor demonstration.

A farmer living near Fresno was an interested visitor at the Bear Cat tent. He wanted to displace two ten mule teams. He figured that he could sell the 20 mules for $150 a piece, or approximately $3000, and replace them with one Bear Cat Tractor costing approximately $1800. It requires two men to drive the mules, and costs $20 per day for feed, but by operating a tractor continuously he could do his work in the busy season in from 30 to 40 days working two men two

Continued on Page 322



General Display of Cleveland Tractor and Bates Steel Mule Tractor with one of the big Schmeiser levelers which is also handled by F. T. Briles, Los Angeles.

L. A. Auto Tractor Company's Little Bear Tractor. Standing is W. S. Brush, manager; on driver's seat, C. P. Rhodes.

International Tractor 8-16. M. C. Egly, driver, with 6-foot double disk International Harrow and 60 spiked-tooth harrow.

Advance Rumely Oil Pull Tractor, pulling P. & O. Little Genius Power Lift Plow.

Lauson Tractor. Handled by De Laval, San Francisco, and S. C. Carter, Los Angeles. Standing, Chas. A. Crate, of the De Laval Co.; driver, W. E. Blaisdell. H. C. Robbins with S. C. Carter at edge of picture. Pulling P. & O. Little Genius Power Lift Plow.

J. I. Case Tractor. Walking by its side, Miss Dorothy Blackman, Mark Engler, W. C. Moen, Ray Zile, Richard Stockton, A. M. McDermott. Pulling P. & O. Little Genius Power Lift Plow.

What Does It Mean

Ignition K-W High Tension MAGNETOS With IMPULSE STARTER

In reading over the specifications of the leading tractors, you will see under *Ignition* the phrase "K-W High Tension Magneto with Impulse Starter."

The Impulse Starter

What Does It Mean? To owners of these tractors, it means Sure and Easy Starting, regardless of the weather, how large the motor or how slow the engine is cranked. It means *No* Batteries, *No* Starting Coils, and *No* Complicated Self Starters. It means absolute protection against motor "kick-backs" while cranking even when the spark lever is left fully advanced.

What It Does! The K-W Impulse Starter holds back the shaft or rotor of the magneto until the firing point of one of the cylinders is reached. The shaft is then automatically released and is propelled forward (by means of a powerful spring) at a very high rate of speed—until it catches up to its former position. This produces a spark as large and hot as though the engine was running at full speed, thus insuring an explosion in the cylinder and a positive immediate start.

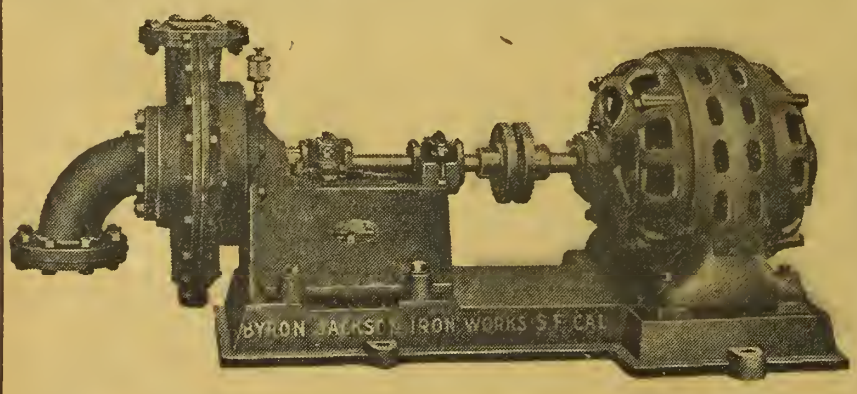
K-W High Tension MAGNETOS

not only insure the Easy and Quick starting of cold motors, but increase the power derived from the same amount of fuel, over that of any other ignition system. They permit the use of the cheaper grades of fuel and give "No Trouble" service.

Before You Buy a Tractor. Look up a neighbor who is using a K-W Magneto and talk it over with him. Then we know you will insist upon a K-W Magneto on *any* tractor you may decide to purchase.

THE K-W IGNITION Co
2895 Chester Ave CLEVELAND, OHIO, U.S.A.

Write for a list of K-W Equipped Tractors



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When writing advertisers, mention The Cultivator.

America's Self-Sacrifice---A Moral Demonstration

AN ENGLISH appreciation of America's help in supplying food is given by Harold Begbie, an English writer, in the Outlook. It won't hurt us to read once in a while of our English allies' appreciation of what we are gladly doing to help in the biggest need that has ever confronted the world. Of course we know that ours is but a tiny bit compared to the all that the Belgians, the French and the British have given these years past, but we're just starting. We've "got to going" and were "going to put it through":

One of the finest moral actions in this war has been done by America. It is action on a gigantic scale, and yet of a directly personal character. Insufficient publicity, I think, has been given to this action.

Is it realized by the people of this country that America has already saved us from capitulating to the enemy? Either we should have been forced into this surrender (with our armies unbroken and our munitions of war unexhausted) or we should at this moment be struggling to live and work and fight on one-third of our present rations.

America is sending to these islands almost two-thirds of our food supplies. Sixty-five per cent of the essential foodstuffs eaten by the British citizen comes to him from the American continent. This in itself is something which calls for our lively gratitude. But there is a quality in the action of America which should intensify our gratitude. For these American supplies, essential to our health and safety, represent in very large measure the personal and voluntary self-sacrifice of the individual American citizen. They are not crumbs from the table of Dives. They are not the commandeered supplies of an autocratic government. They represent, rather, the kindly, difficult, and entirely willing self-sacrifice of a whole nation, the vast majority of whom are working people.

There is only one altar for this act of sacrifice — it is the table of the American working classes. And the rite is performed by men, women and children, at every meal of the day, day after day, week after week.

This act of self-sacrifice, let us remember, is made in the midst of plenty. Well might the American housewife ask why she should deprive her children of food, why she should institute wheatless and meatless days, when all about her there is a visible superabundance of these things. Questions such as these are natural enough on the other side of the Atlantic, and on the other side of the American continent, though 5000 miles away from the battlefields of France.

But the citizens of America do not ask such questions. With a cheerfulness and a courage which are as vigorous as their industry, and with a moral earnestness which is by far the greatest demonstration America has yet given to the world of American character, these people so far away from us on the other side of the Atlantic have willingly and with no coercion by the state denied themselves for the sake of the Entente. They are going short, they are going hungry, for our sakes. They are practicing an intimate self-sacrifice in order that we may hold our own till their sons come to fight at our side. All over America the individual American citizen is making this self-sacrifice, and making it without a murmur. He is feeding, by his personal self-sacrifice, not only these islands, but France, Italy, and many of the neutrals.

This great demonstration of character has had no other impetus than the simple declaration of the facts by Herbert Hoover, the man who fed Belgium. Hoover has told his countrymen how things stand. That is all. The winter of 1918, he declared to them, will prove to mankind whether or not the American nation "is capable of individual self-sacrifice to save the world." His propaganda has never descended to unworthy levels. He has spoken of "a personal obligation upon every one of us towards some individual abroad who will suffer privation to the extent of our own individual negligence."

America has answered this appeal in a manner which marks her out as one of the greatest moral forces in the world. It should be known out there, in the farmhouses and cottages of the American continent, that the people of this country, tightening their belts and confronting the future with an indestructible confidence, are mindful of America's self-sacrifice, and are grateful to her men and women and children for their self-sacrifice—self-sacrifice which will save the world.

Save Burlap Bags

Continued and increasing war demand on the jute industry of India for burlap makes necessary the utmost conservation of this product which we have been accustomed to use freely, even wastefully. India is the great jute center of the world. There the jute is grown, made into fiber and manufactured into jute cloth which is commercially known as burlap or gunny-sacking.

Imports of burlap cloth by the United States normally average about 700,000,000 yards annually. After reaching this country most of the burlap cloth is sewed into bags, most of which are used as containers for food and feed. Investigations by the food administration show that somewhat more than three-fourths of all burlap imported is used by farmers in shipping agricultural products or in buying necessary supplies.

The United States food administration is without authority to control either the supply or price of burlap from India at the moment, but the importance of this product as a food and feed container makes a full understanding of the situation by farmers desirable. Here are the food administration's requests:

Burlap is valuable. Save the present supply, reserving enough on farms for probable future needs.

There is a good demand for second-hand bags at fair prices. Put surplus back into the channels of trade.

Even fertilizer bags can be saved unless acid fertilizers are allowed to remain in them too long. Empty the bags at once, wash and dry them. Sugar bags, after emptying, should also be washed and dried.

You need not mend torn bags that are to be sold. Big manufacturers have special facilities for doing this work and they prefer to do it.

Allow no burlap or bags to mildew or to be damaged by storing in a damp place. Keep them clean and dry.

Any waste of burlap adds to the national demand, which in turn causes an economic pressure for shipping from India. Saving burlap helps to save shipping to supply the American armed forces abroad.

Starting a Farm Flock

Written for California Cultivator By Jean A. Koethen

DOES the Cultivator reach any home, I wonder, where there is not a flock of hens? Does it reach any home where there is not a producing, profitable flock of pure bred hens? The first question may be answered in the negative, but not the second. It is a conspicuous fact, and one by no means creditable to the business sense of the average farming community, that, while most rural homes find room for a flock of some sort, it is frequently unprofitable and still more frequently not pure bred.

We have passed the stage of arguing whether or not poultry pays. If there was ever any doubt about the value of a well cared for farm flock the war has settled it once for all. As long as nourishing food is required for our soldier boys and our children, so long will a well culled, well bred farm flock be a good investment. A mongrel flock is better than none at all, but a flock of good hens, fed largely on what would otherwise be wasted, gives quicker returns than a pig, and involves less capital.

In beginning with chickens, whether one is replacing poor stock with better or starting from the ground up, it is important to begin in the right place. Do not begin by building a house or buying day-old chicks or pullets or hatching eggs. Begin now, this fall, with a poultry garden. If you plant all available ground to poultry greens between now and February you will be ready then for baby chicks. So many people make the mistake of stocking up first and then planting green feed only to find that their chicks are ready for greens long before the greens are ready for them, that this program cannot be too firmly insisted on. It is possible in some communities to buy lettuce for chicks, but this is expensive and not to be depended on. The only economical way of raising chicks is to raise all the greens and succulent vegetables they will eat and to make these things as large a part of the ration as possible. The only limit to the variety and acreage to be planted is the ground at one's disposal, and the size of the flock must depend (or should depend) on the size of the garden. Do not think it will pay to keep a flock of 50 hens when you have only green feed for 25. Better plant greens for 25 and then limit your flock to ten, for they always eat more than you expect.

Having planted your garden, the next thing is a house for the hens you are to have. For a small number, whether Leghorns or hens of the larger breeds, it is better to allow at least four square feet of floor space to each hen. Commercial poultrymen manage with considerably less, but the farmer should not attempt it. A shed roofed house eight feet square, with the front open or enclosed with wire will comfortably house 15 heavy hens or 20 Leghorns, allowing three feet for the smaller breed. If you wish to keep a larger number, make the house a little larger. It is well to remember, however, that you will need either two small houses or a larger one divided into two sections, for the pullets must not be yarded with hens. A house 16 feet long and eight feet deep, divided into two equal parts, and with two separate yards, gives ample accommodation for 15 to 20 hens and a somewhat larger number of pullets. Incubator chicks can be put in the pullet house at the start, and can remain there, the cockerels being weeded out, till they are through the first year's laying. If the chicks are hovered by hens, raise them in little runs and coops by themselves, putting the pullets in the pullet house shortly before they are ready to lay.

Make the house face south and give it as large yards as you can spare. Ror a long time I advocated the double yard plan for poultry runs but I have never been able to make it work satisfactorily, and I don't recall more than one poultryman of my acquaintance who has. The trouble is, that the hens will eat up in a few days all the green that has been grown in two or three months. What they do not eat up they tramp down. It is more economical to grow greens in a yard where the chickens can never reach them and feed them to the flock as they are needed.

Fall is the best time for starting the garden and building the house and runs, for hatching should begin soon after New Year's. Should you wish to begin with breeding stock, buy it between September and January. You can buy it for less at this season and your stock will be accustomed to its new quarters in time for the hatching season. Should you prefer to buy baby chicks, order them for the first of February. If you do your own hatching with scrub hens get some eggs under the hens by the first of February. It is not always easy to procure broody hens at this time, but do not worry if your hatching is delayed till March. March is the best month of the year for hatching, and pullets of any except the Asiatic breeds hatched in March should lay in October or November.

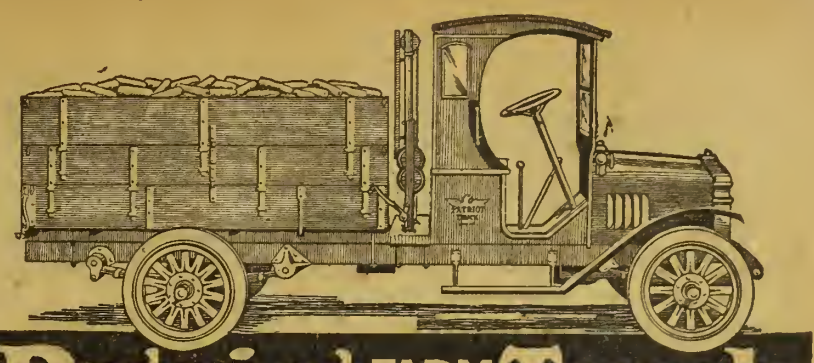
You will need to hatch or buy at least three chicks for every mature pullet you expect to have. If 15 is the size of flock you have in mind, 50 incubator chicks, which can be raised at once in the pullet house with the assistance of a small brooder stove, are enough to start with. But do not experiment with incubator chicks. If you have never raised a brood by hand, wait till some emergency demands it before you try. Mother Biddy knows more about chicks than any of us, and your nights will be more restful and your days less strenuous if you let her mother them. When she leaves them is time enough for you to begin.

IT'S EASY TO SAVE SWEET CORN SEED

A single ear of sweet corn will furnish enough seed for a small garden. Think how easy it is to save the best ear you produced this year for planting next spring when seed may be hard to obtain! All that is required is to dry it thoroughly and store it where it will not be injured. But saving seed from the garden should not be limited to sweet corn. Seed from the best beans, peas, tomatoes and other vegetables should be selected this fall when they can be obtained easily and the supply is abundant.

ORANGES IN SOUTH AFRICA

Steady development is going on in the orange industry of South Africa in spite of the war. A proposition entailing the putting of approximately 9000 acres under citrus fruits in one block is now being developed. It is proposed to plant entirely with Washington Navels, Valencia Lates, in equal numbers, at the rate of 100 trees per acre.



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Built for Country Roads
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The Patriot is the first Motor Truck built especially for farm work. *It is equipped with a practical farm body,* similar to what you have always used on your farm wagon.

It saves horses and high-priced feed. *It brings better markets nearer,* for with a Patriot you can readily drive loads to a market 100 miles distant.

It lays down 15,000 to 20,000 pounds at market in practically the same time that a team will deliver 5,000 pounds, literally bringing the farm to about one-fourth its actual distance from market.

Business farmers can easily see how such perfect transportation greatly increases the value of their farms, to say nothing of the convenience in being master of roads and weather. Every farmer with 160 acres or more should find out what a Patriot Farm Truck will save. Write for information.

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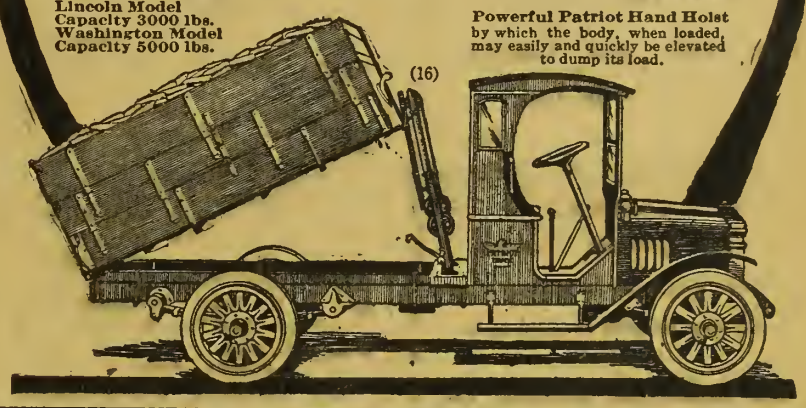
Manufacturers of Patriot Farm Trucks
1339 P Street Lincoln, Nebraska

Lincoln Model Capacity 3000 lbs.
Washington Model Capacity 5000 lbs.

Powerful Patriot Hand Hoist by which the body, when loaded, may easily and quickly be elevated to dump its load.



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SHORTEN the moult and lengthen the laying. Globe A-1 Mash (dry buttermilk added) will do it. The live lactic acid bacilli in the dry buttermilk will keep your flock in glowing health: (bulletin 162 U. S. Agr. Exp. Sta., Berkeley). For Hogs A-1 Hog Feed 10% dry buttermilk) will save from $6 to $12 on fattening each hog.

Fact Book for poultry and hog raisers sent free.

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Fact Book A-1 POULTRY FEED

Buttermilk GLOBE A-1 Dry Mash

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The Eggs You Didn't Get

How can you expect a hen to lay 150 eggs a year or even 50 eggs if her vitality is sapped by lice and mites—all she can do is itch and fret and cost you money.

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A Sure Killer of Vermin—safe and economical to use

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FOR GREATER EGG PRODUCTION
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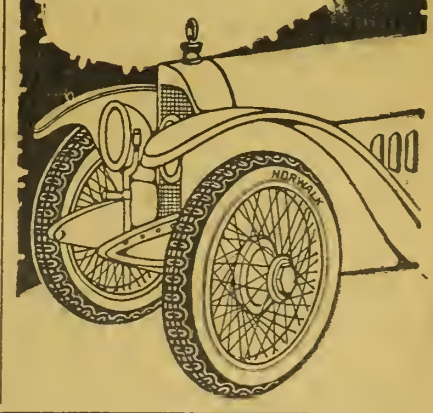


Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

DEMONSTRATION NOTES

Continued from Page 319

shifts. Operating the tractor would cost $3.00 every ten hours, making a saving of about $17 per day with no expense when not in operation. After the busy season one hand could do the work, and after the sale of the mules this farmer would have a $1200 surplus. The mules could work only eight hours while the tractor could work continuously. Mr. Burt said "A man can buy a Bear Cat and make $25 per day of 10 hours plowing at a cost of $3.00 for fuel and $4.00 for a driver. You do not have to have a $10 a day man to drive a Bear Cat. This leaves $18 per day for the owner for profit and depreciation."

Banks over the country, to men of good credit, loan money up to two-thirds of the value of the tractor at seven per cent on six months' time. This seems to be about the usual ac commodation.

Prof. Davidson of the University of California attended the tractor demonstration. He was en route to Visalia, where he gives a short course in the care of tractors and tractor farming this week.

The Interstate Plowman Tractor made its first Southern California appearance at the tractor demonstration although this tractor is well known in the Central States. Mr. Doak, president of the Doak Tractor Co., handling the Plowman, secured some splendid souvenirs in the way of enormous clods plowed up by his machine, which ran the entire demonstration without the change of a spark plug or engine trouble of any kind.

There was a great deal of interest in the "Little Husky" Tractor made by the Homer Laughlin Engineer's Corporation of Los Angeles. The demonstration of this tractor was very pleasing to its owners and originators and interesting to the crowd. "The corporation has disposed of all it can make for the present," said Mr. John Craig, general manager. "We expect to be in full production in about 60 days."

Mr. Pevovoroff of Ensenada, Old Mexico, placed an order for 12 Belt Rails.

Mr. Cook of Anaheim exhibited a topper and ribber and with George Bullock's Belt Rail demonstration, a goose neck tiller made by H. Jessen at Santa Ana was shown. The output of California made implements is increasing from year to year.

C. B. Hay, sales manager of the Averill Machinery Co. of San Jose, and C. C. Roth, Southern California salesman handling the Russel Tractor demonstration. The Russell 10-20 pulled 2 12-inch plows.

The Appleton Manufacturing Co. manufacturers of the Appleton Silo Filler and now manufacturing tractors, also were represented at the demonstration by C. S. Anthony.

Men with hilly ground showed keen interest in the Interstate Plowman Tractors, as these machines do especially fine work on side hills.

Every farmer who has ever driven a disk plow will welcome the announcement of the new automatic disk shown for the first time at the demonstration by the Killefer Manufacturing Co., the originators. This new disk is braced and held together so that by the length of the hitch the tractor is given the angle at which it is operated, then by backing up the tractor and taking a short hitch a straight pull ahead straightens the disk to pull out, go over a road, etc. The disks were operated at the grounds and attracted much attention. A miniature was operated in the big Killefer tent by C. A. Wise, secretary of the Killefer Manufacturing Co.

Thirty-two lines of agricultural implements were exhibited in the Killefer Manufacturing Company's tent, including a huge five standard subsoil plow, orchard cultivators, beet and bean plows and the Killefer Automatic Disk. On Saturday the entire Killefer organization turned out and attended the demonstration in a body.

The Rock Island Plow Co., known for a good many years in California through the E. P. Bosbyshell Co., distributors, this year entered their tractor, the Heider. An interesting feature of the demonstration was the operating of a silo cutter, the Heider operating continuously for many hours. The Heider did splendid work also, plowing in the hard ground.

The A. F. George Co. had charge of the Yuba Tractor demonstration and the exhibition of the John Deere implements. Some of the clods turned up by this combination would make excellent fortification material.

The Nilson Tractor demonstrated that the pull of the implement could be used to hold the tractor down instead of making it necessary to have a heavy tractor. This feature of the Nilson is valuable and many purchases are made on the strength of this feature alone. Smale and Waterbury of Los Angeles put on the Nilson demonstration.

Mrs. King, the tractor girl who handled the Sandusky so successfully, said that she was good for field operation not only for one day but for several days with the Sandusky. She thinks it a matter largely of a woman's will when it comes to sticking to the game. Mr. Raab handled the Dauch Company's goods.

S. C. Carter Company handled the Lauson, and they were aided by Mr. Crate of the De Laval people of San Francisco. The De Lavals handle the Lauson territory of the North.

The newest was the Sure Grip Tractor manufactured and exhibited by the Union Tool Co. of Torrance. It gives the impression that it has staying qualities.

The Gregory's were there with the Lambert and Trundaar which handled plows beam deep in dry 'dobe. The most enthusiastic driver of these machines is Leonard Gregory who was granted furlough during the demonstration from the aviation field near Riverside.

The new Fordson came and was seen by many. It received both praise and criticism.

Dixon and Griswold are the fellows who are alleged to have put a whole lot of the DiG into the meet. They were everywhere, and nearly every tractor was using their P. & O. line of implements. They had 30 service men in charge of their implements.

Samson in all his strength was there. And the Samson Sieve-Grip surely grips the ground and gets away with it. It was surprising to see it walk away with a big subsoiler.

The Heider was not only shown in general demonstration but was connected up with a shredder which was handling straw and fodder and was making a most attractive feed. It was exhibited by E. P. Bosbyshell.

Some especially effective work was done by the Oil-Pull exhibited by the Advance Rumely Co.

The Cleveland and Steel Mule were both exhibited by F. T. Briles. Tractor Model H was running without attention in a semicircle 12 feet in diameter, showing its ability to turn short.

The California Moline Plow Company exhibited "Model D" connected up with many types of tools and showing the one man method of farming.

The Oliver Plow people made tent exhibit and also demonstrations of modern plows.

W. L. Cleveland Company exhibited in addition to many implements the Waterloo Boy, the Monarch, and the Cleveland power cultivator.

The Interstate is one of the newer Eastern made tractors exhibited at the demonstration by the Doak Tractor Company.

International Harvester Co. exhibited a couple of the medium powered tractors.

Arnott & Company put the Stinson 18-36 into some exceptionally heavy work. They were aided by a representative direct from the Minneapolis factory, John de Bruynkops, and by 20 service men.

J. I. Case Company had hardly as large an exhibit as at the state fair but they showed the ability of the new light weight tractor to handle its small loads; likewise exhibited the medium powered tractor.

L. A. Auto Tractor Company exhibits the Little Bear. It looked true to name.

Fageol negotiated some exceptionally hard ground, likewise had a little track of its own where without driver it was making its continuous circle.

The R. & P. track laying double traction wheel. A big wheeled type of machine has an ingenious "track-laying" feature which gives exceptionally strong tractive power.

Hayman Implement Company made exhibit of implements in special tent.

Two pioneers, Benjamin Holt, president of the Holt Manufacturing Company, and Mr. Dickenson, for 25 years his secretary, came down from Stockton and enjoyed every minute of the week.

C. L. Best Company exhibited one of its big 75's used for the past three years on the La Brea Ranch, where the demonstration was held. It showed no loss of its old time power.

The boys came down from San Francisco and the North 75 strong. They received hearty welcome and gave invitation to the greatest ever which they propose to hold "Somewhere in California" next spring.

The rules forbade the placing of large placards on the tractors, but the boys could not resist, and some big painted banners were exhibited.

The banquet was a complete success. There was plenty to eat and plenty of water. The speeches were rather subdued because of the general hilarity prevailing. The boys all said the water was fine but the banquet was extra dry.

PLANTING NARCISSUS

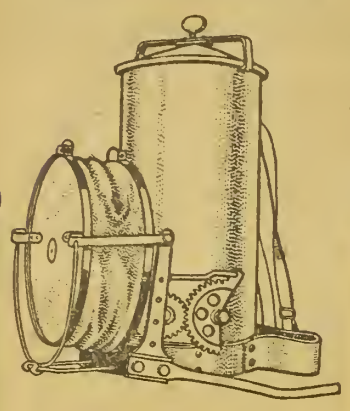
Examine all bulbs before planting and if a thick crust is found covering the base of any pull it off, or cut it away if it will not pull off. Use the knife too, if any signs of dry rot are found. Do not be afraid to do this for it will do no harm to the bulb. The writer has, many times, cut away the base of bulbs and never had reason to think it did the slightest harm, though many times it has saved bulbs that most certainly would have rotted without heroic treatment. Putting into moist soil will never stop decay after it has once started, and roots can not force their way through a hard shell without using up the vitality of the bulb in doing so. Remember this: As long as the little white spots that are the roots stored in the bulb can be seen, cutting does no harm, and they usually reach up to the center of the bulb.

Narcissi will not need transplanting for several years and for this reason should be given plenty of space in which the bulbs can multiply without crowding. Plant five or six inches apart, each way, and four or five inches deep according to size of bulbs—some varieties having much smaller bulbs than others. A round stick, sharpened at the end, is easily driven into the soil and provides an easy way of setting the bulbs at an even depth, if a mark at the desired height is made.

Planting may be done in September if bulbs are available, or it may be done during October or November.

Where there is a possibility of the soil being at all soggy put a layer of coarse gravel, coarse coal ashes, or other drainage material under the bed. If this can not be done put finer coal ashes, or sand, an inch or more deep, under each bulb as planted and if it comes well up around the sides of the bulb no harm will result.

American Beauty Dust Sprayers



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Household Department

A WOMAN'S THANKS

Whenever I meet a sailor or a soldier in the street
My thanks lie at his feet,
While o'er his head I place a helmet fair
Of prayer,
That he may come again to all who hold him dear,
Both far and near.

Thus, while I pass a soldier on the street—
This vision fleet!
I do not even hold a grateful hand.
Thus, while I stand,
I only bow my head and say,
"Dear lad, God bless you on your way
And bring you safe home some day
To that dear harbor where you long to be.
I can not thank you for your gift to me."
For who can thank for life, love, liberty,
The one who gives life's hourly sacrifice?
—Eleanor Van Allen Furman.

SONGS OF THE WAR

By John McNaught in Sacramento Union

ANDREW FLETCHER of Saltoun, in a letter to the Marquis of Montrose, wrote some 200 years ago: "I knew a very wise man that believed that if a man were permitted to make all the ballads he need not care who made the laws of a nation." Perhaps we shall some day have a history of a nation based on its ballads. At any rate it is interesting as the war now draws so bloodily to its close, to note with what gayety of heart among the song writers and singers it began.

The French indeed marched to battle singing the Marseillaise, for to them the war was serious from the start, but the British sang the rippling lyric, "It's a Long, Long Way to Tipperary"; the first Americans sailing from New York sang:

"Send the word over there
We'll be over,
We are coming over
And we won't come back
'Til it's over over there."

As for the Germans, it is reported they marched through Brussels in the joy of their great expectations, singing our own old-time favorite of the vaudeville circuit: "Every little movement has a meaning of its own."

The Guns of Flanders

The poets of the current publications took their tone from the songs of the soldiers, and were jubilant in verse. Their exuberance found fair expression in such rhymes and rhythms as this:

Crack Whup,
Did you speak to us?
Do you teach us or beseech us?
We are the guns! the Flanders guns!
Crash! crump!
Do you ask us of our task; us in our mask; us
Demon guns, hounders of Huns?
You sit and moon, we'll fume and boom.
We'll croon the tune of hell hounds doom.
Point and bark! Recoil and hark!
On the mark! Stiff and stark
Are the Huns' sons
When our gun tongues
Dun doom upon the Hun runs.
Oh we're the guns.

The "Mercenary" Army

British sentiment grew fierce when it was made known that their army of professional soldiers sent over to France, had been mocked at by the kaiser as a "contemptible little army of mercenaries," but changed to pride when the little army held back ten times their numbers in the retreat from Mons, and kept their front unbroken till at the Marne they had a chance to strike hard and win. British civilians themselves had in times of peace made light of the soldier whom they called "Tommy," but now all at once there flared up a sense of national glory in the valor of the regular, and a poet wrote of them:

These in the day when heaven was falling,
The hour when earth's foundations fled,
Followed their mercenary calling,
Took their wages; and are dead.
Their shoulders held the heavens suspended,
They stood, and earth's foundations stay.
What God abandoned, these defended
And saved the sum of things—for pay.

The Hymn of Hate

The entrance of the British into the war with all their forces, and the defeat at the Marne, changed German temper from contempt to hate. There was no longer any mockery of the British army nor of British power. In place of former contempt there grew an anger so intense and so passionate that no savagery ever surpassed it. Out of this feeling came the famous hymn of Ernst Lissauer:

So what care we for French or Russ?
It's shot for shot when they shoot at us.
We fight our battles with bronze and steel
And when we stop we shall see them kneel.
It is you we hate with a lasting hate,
Nor will abate one tittle of hate—
Hate by water and hate by land,
Hate of head and hate of hand,
Hate of artisan, hate of king,
Hate that seventy millions fling:
One love they know, one hate they know,
They know but one, one only foe
England.

A Reply from France

So far as I knew the hymn of Lissauer was never answered by a British poet, but among the writers of French newspaper verse was one that took the hatred to his own country and replied to it as if it were a good fortune:

O Germany long live your hate!
If gaunt eyed sorrow dwell with us
And hills and plains are desolate
And some are dead that fell with us,
It is because our skies and seas,
Our charm and genius is to please,
And all that in the world is right
And fine and sweet and good and great,
Excites your envy, greed and spite,
France is the day; and you the night,
Long live, O Germany, your hate.

Russian Song of Revolt

The Russians marched to battle singing the national hym of loyalty to the czar; but they soon learned that the czar was but a puppet in the hands of men guilty of a treason that betrayed alike, the czar, the people, the soldier, the country and the cause. Thousands of Russian conscripts reached the battle lines without weapons to fight with, thousands that had weapons found no ammunition for them, thousands that had both weapons and ammunition had no food. An inevitable revolt followed, forced on by famine and sharpened by wrath gainst the traitors, and the treason. Workingmen struck in the shops, soldiers abandoned the field. Then in Petrograd came the march of multitudes singing:

Let us give up the ancient order,
Let us shake its dust from our feet.
We wish no idol in gold.
We hate the palace of the czars.
We will go to our suffering brethren.
We will go to those that are starving.
With them we will hate the tyrant
And we will challenge him to fight.
March, march, workmen, march.

America Joins In

While such songs were sung and such verses written in Europe, the poets of the United States kept neu-

Wars are won with metal—save it.
Iron and steel are needed for tanks, guns, ammunition, ships, railroads, etc. Folks at home must save iron and steel to help win the war.
Use the old range until after the war.
Make your old range do a little longer by having it repaired. If it's past repairing, then the next best step is to buy the range that saves fuel, food and repairs. The Majestic's heat-tight riveting prevents fuel waste; its perfect baking prevents food waste, and its unbreakable malleable iron and rust-resisting charcoal iron make repairs a rare need.
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" Watsr Solubls Potash	3.48 to 3.92 psr csnt	" Water Solubls Potash	3.62 to 3.88 per csnt
" Humus	5.07 to 5.70 psr cent	" Humus	7.42 to 8.12 per cent

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Pumps

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Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

Send for Catalog 103

Pomona "Made Right" Irrigation Gates and Valves

PRICES RIGHT — QUALITY RIGHT
SEND FOR BOOK C.

Pomona Mfg. Co.
POMONA, CAL.

W. J. Bush
Citrus Products Co., Inc.
National City, Cal.

Manufacturers of
ESSENTIAL OILS AND CHEMICALS

Citrus By-Products a Specialty

We are always in the Market for Lemon Culls

THE SELF-OILING WINDMILL
has become so popular in its first three years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load
We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws.
Write AERMOTOR CO., 2500 Twelfth St., Chicago

For Sale by
SHAW-PALMER-BAKEWELL CO.,
421 East Third St., Los Angeles.

WITTE
Kero-Oil Engines
Twice the Power at Half the Cost
Sizes 2 to 30H-P.--Select Your Own Terms -- Direct-from-Factory prices. Write your own order--Save $15 to $200. Prompt Shipment. Big new catalog, "How to Judge Engines" FREE--by return mail. Postpaid.
Write Today, 3100 3100 WITTE ENGINE WORKS Oakland Ave., Kansas City, Mo. Empire Bldg., Pittsburgh, Pa.
Money Back if not satisfied on my New 90 Day Engine Offer

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

trality with difficulty. Almost immediately after the raiding and wrecking of Belgium came a song that having little of poesy in its phrases, had none the less a sincerity of sentiment that won popular sympathy, and up and down the country one could hear the chorus:

"Belgium, your tears are falling,
Belgium we hear you calling,
Belgium dry your tears."

Summons of the Dead

A Canadian officer, Colonel John McCrea, killed in Flanders, had written shortly before his death a short poem ending with the lines:

"We are the dead. Short days ago
We lived, felt dawn, saw sunset glow,
Loved and were loved, but now we lie
In Flanders fields.
Take up our quarrel with the foe.
To you, from falling hands we throw
The torch, be yours to hold it high.
If ye break faith with us that die,
We shall not sleep, though poppies blow
In Flanders fields."

When Colonel McCrea's death was made known an American wrote the response:

Fear not that ye have died for naught.
The torch you threw us we have caught,
Ten million hands will hold it high,
And Freedom's light shall never die.
We've learned the lesson that ye taught
In Flanders fields.

So we entered the war and our poets and our verse and song writers began to add their voices to a chorus now become so numerous that further discussion of it must be left to somebody that has a volume or volumes of space at his disposal.

The Master Poets

One of the mysteries of our spiriual life is that the master poets of the world have never been affected by wars of their own time, nor have ever written of them. Homer wrote of a war that had taken place at a time already legendary before he was born. So did Vergil. Dante wrote of Hell, Purgatory and Paradise, but nothing of the Guelphs and Gibellines. Shakespeare lived during the religious wars that turned Europe into savagery, but none of it is reflected in his writings and no one knows whether he was Papist or Protestant. Milton lived during the civil war in England and was secretary to Cromwell, but he wrote of Paradise Lost and not of Naseby and Marston Moor. Goethe lived during the French revolution and the Napoleonic era of conquest, but he wrote of Faust, not of Napoleon nor of Blucher.

It may be that as in the ocean there are deep currents whose motions are beyond the reach of storm winds that fret the surface, so there are in the soul of man deeps that responding only to eternal verities are not moved by any kind of mortal calamity, and that the master poets live and have their being in these.

Yet war reaches the profoundest sympathies of most of us; and were it possible to measure the invisible and intangible, to weight and appraise things spiritual and immortal, it might be found that the heart of humanity yields not to the highest genius, nor to Homer, nor to Shakespeare, a deeper veneration or a higher honor than that it gives to those of whom we say today:

Oh valiant souls, who loved not Duty less
Than Honor, whom no fears could move to shirk
The common task; no tyrant's threat subdue,
When Right and Freedom called in their distress.
Not vain your sacrifice, nor lost your work:
The world's whole heart beats high because of you.

HOUSEHOLD QUERIES

Moths

What can be done for a house that is infested with moths, excepting a constant house cleaning? There are two or three different kinds and they get into foods, clothes, and carpets. Have tried sulphur fumes. After cleaning they seem to come back in just a short time.—Subscriber, Kingsburg.

Moths seem to be everywhere in some sections, and the only way of protecting woolen garments not in constant use is to thoroughly sun, if possible clean in soap and water or gasoline, wrap in paper that you are sure has no holes in it, pasting edges together instead of tying to be sure that no moth will find entrance. Clothing that is left hanging in closets must be looked after almost weekly, put out in broad sunlight unless worn. Moths in woodwork may be destroyed by washing in water in which there is a little turpentine. Where there is a serious infestation in carpets or hangings the only sure way of getting rid of the pests is to have the house fumigated with hydrocyanic acid gas. Where near a city this can be done quite reasonably by a professional. The modern closet built with window admitting light and air helps to control moth pests. Subscriber speaks of several kinds of moth, some of which get into food as well as carpets. These may be buffalo moth, the larva of which is one-fifth inch long covered with dark brown hairs. The adult is a small beetle, black with white spots. To get rid of these wash floors and woodwork with hot soapsuds, pour kerosene or gasoline into cracks. Fill cracks with putty and paint. Same cleaning and airing as above. The moths that get into flour can only be kept out by storing in tight receptacle. In some sections it is impossible to keep moth out of flour where it is kept for any long period. It is better to buy in small quantities and use up quickly. If kept in bin it should be thoroughly scalded and aired before new flour is put in.

How to Use Avocados

Have been trying to find some recipes for avocados and am not successful. Will you please publish some in your next Cultivator, especially salads?—Subscriber, Anaheim.

Cut in small cubes and add to the soup just before serving.

On Toast—Remove the flesh with a spoon and mash with a fork. Spread thickly on a small square of hot toast. Add a little salt and pepper. This is one of the nicest ways of serving avocado.

Sandwiches — Mash flesh, season with lemon juice, salt and pepper. Spread between very thin slices of rye bread. This can be varied by mixing with chopped chili pepper, nuts or olives. A little chopped onion also added makes a delicious sandwich.

Salads. These may be made in almost infinite variety. Mix diced avocado with lobster, salmon, tuna or other sea food, combine with celery, serve with mayonnaise.

Another good one.—Cut fruit in half, remove the seed, fill cavity with chopped celery and nuts blended with mayonnaise or French dressing. Another, — Mash flesh of avocado, beat with mayonnaise, put over chopped celery and apples. Also good combined with apple and banana. The

The Cultivator Patterns

8914—Girls' Dress. Cut in sizes 6, 8, 10 and 12 years. The dress buttons from V-neck to hem at center front.

8955—Children's One Piece Dress. Cut in sizes 2, 4 and 6 years. This simple yoke dress is worn over bloomers.

8948—Ladies' Shirtwaist. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. The waist is to be slipped on over the head.

8932—Ladies' Long Waisted House Dress. Cut in sizes 36, 38, 40, 42, 44 and 46 inches bust measure. The dress closes at center front and is rolled back at the neck to form reveres.

8936—Misses' and Small Women's Dress. Cut in sizes 14, 16, 18 and 20 years. The dress is in double-breasted effect, and a very attractive collar follows the neckline.

8942—Children's Dress. Cut in sizes 2, 4, 6 and 8 years. The V-neck is finished with a becoming cape collar.

8952—Ladies' Tunic Skirt. Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. The one-sided effect makes a successful debut in this smart tunic skirt.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

PATTERN DEPARTMENT
CALIFORNIA CULTIVATOR
Los Angeles.

Cuban way of serving is to place three stuffed olives in a half fruit, add lime or lemon juice sweetened.

As a dessert. Avocado and chopped dates beaten in whipped cream slightly sweetened. Ice cream.—Yolks of five eggs, one quart milk, add Maraschino cherries, two cups sugar, four medium sized avocados, almond or vanilla extracts. Make a boiled custard with the milk, egg and one cup sugar, flavor with almond extract. When the custard is cool add the fruit and freeze. Serve with Maraschino cherries on top of each dish.

As a cocktail. Cut in cubes, serve with cocktail sauce.

All these, if you secure ripe fruit. If unfortunate enough to secure on the market fruit picked green with an astringent, soapy flavor it will be necessary to slice thin and soak over night in weak vinegar and salt. There is nothing better than the ripe fruit but the immature, withered specimens often offered to the inquiring purchaser discourage second trial.

HOW TO PRESERVE VEGETABLES IN BRINE

Brining is a very cheap and convenient method of preserving vegetables for winter use. Sauerkraut made from small or bursted cabbage heads, and pickles made from surplus cucumbers are two familiar examples. The most important use of brining is to save vegetables which are of the best quality now, but which will spoil before time to store them. Carrots and beets should be put away in brine before they become tough and woody. Snap beans, peppers and green tomatoes can be brined any time before frost. Greens, such as chard, beet tops and spinach may be brined if it is not convenient to dry or can them just now. Sweet corn pickled either on or off the cob keeps nicely if boiled ten minutes before placed in brine. The ears must be picked while in the milk state, and the silks should be removed with a brush. Egg plant is kept more easily in brine than by any other method. Sound, mature fruit should be selected, peeled and placed in a weak solution of brine immediately.

The usual formula for making brine is three-fourths of a cup of ordinary table salt or a coarser grade to a gallon of water. One-half pint of vinegar may be added to each gallon of brine. Any water tight container will serve for the brine, but stone crocks and small kegs are more convenient. The vegetables should be placed in the container to within a few inches of the top, then the brine poured over them so that they are well covered. The vegetables may be kept beneath the surface by weights placed on a piece of board or plate.

KEEPING SCUM OFF BRINED VEGETABLES

After the brined vegetables have stood in a warm room for a few days, a scum will collect on the surface and should be removed. The containers should then be placed in a cool cellar, and the surface of the brine covered with hot paraffin, which will exclude the air from the vegetables. It may be more convenient to fill up the container with more brine and place over it an air-tight cover. Brined vegetables keep almost indefinitely if the brine does not leak away or evaporate, says J. T. Rosa, Jr. of the University of Missouri college of agriculture.

RECIPROCAL

"Perkins entertains a good opinion of himself."

"Well, it's reciprocal; his good opinion of himself entertains Perkins."

A Message to the Women Readers of the Cultivator!

—about this marvelous laundry soap that women everywhere are praising.

No Boiling
Less Toiling
Solves the Wash Day Problem

WE KNOW that all of you are interested in improved methods and things pertaining to the household—and particularly in every new way that will save labor and make the daily task lighter.

So we bring you a message about Wash-Day — the day that most women dread.

Here on the Pacific Coast most laundry soaps do not work well on account of there being so much hard water. But—that's the very first problem we solved in making Cocoa Naptha Soap. It works well in either hard or soft water.

Wash Clothes Without Boiling!

Maybe you've heard that before and thought it impossible. But it isn't—now—for those who use Cocoa Naptha say that they get just as good results without boiling as they do with.

It's quite simple. First, wet the clothes thoroughly—in either cold or warm water—and rub them well with Cocoa Naptha Soap making sure that the soiled places get plenty of soap. Then soak clothes for 30 minutes—or over night. In the morning you will find the dirt all loosened and a very little bit of rubbing necessary. Rinse, blue and hang out to dry. You will be surprised at how clean and white they become with so little work.

Saves Transportation and Saves Fuel Too!

The Government wants you to buy local products as far as possible. So here's where you can help. Every bar of Cocoa Naptha Soap you buy means a saving on the railroads.

You know that Uncle Sam wants every one to cut down on the use of fuel. Cocoa Naptha works perfectly in either cold or warm water—so here's another place where you can save.

Cocoa Naptha Soap
Saves Labor—Saves Clothes
Saves Tempers
Saves Time—Saves Money

Order from your dealer. If he can't supply you, write us.

Los Angeles Soap Company

MANUFACTURERS

Los Angeles **San Francisco**

Los Angeles Market

Los Angeles, September 25, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.
Cal. Extra Creamery 58

Sept.	18	19	20	21	23	24
'18 ...	54	55	58	58	58	58

Rcts. wk. ending Sept. 24, 155,700 lbs.

CHEESE

Brokers' prices:
California fresh, lb. 28

EGGS

Exchange quotations. Price to retailers 2 to 3 cents higher.
Fresh extras 56
Case Count 54
Pullets 50
Dairy Exchange prices past week on fresh extras.

Sept.	18	19	20	21	23	24
'18 ...	57	55	55	55	55	56

Rcts. wk. ending Sept 24, 380 cases.

POULTRY

We quote to producers.
Broilers 35
Fryers 31
Hens, small, 24@26; heavy 29
Colored 31
Ducks, lb., 20; ducklings .....22@25
Roasters 31
Roosters, old 20
Turkeys .....30@35
Geese 15
Belgian Hares 16
Squabs .....30@35

LIVESTOCK

We quote cwt. f. o. b. L. A.
Corrected Wednesday morning, September 25, by the Cudahy Company.
Cattle—
Beef steers, av. 1000-1100 lbs.....12.00
Heifers, good 9.00
Cows, good 8.50
Veal Calves 10.00
Canners .....5.00@6.00
Hogs—
Av. 150 lbs. 17.00
Av. 175-225 lbs. 18.00
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers 11.50
Ewes 10.50
Lambs 15.50
Yearlings .....11.50@12.00

POTATOES

Wholesale selling prides:
Burbanks .....3.10@3.35
Sweet, lug .....85@95

ONIONS

Wholesale selling price, cwt.
Australian Brown, cwt. .....2.25@2.40
White Globe .....2.35@2.50

VEGETABLES

Wholesale prices:
Beans—String 6
Limas, lb. 5
Beets, sk. 2.00
Cabbage, cr. .....3.50@4.00
Carrots, doz. 40
Celery, cr. .....3.00@3.25
Corn, lug. .....90@1.00
Cucumbers, lug .....60@65
Egg Plant, lb. .....3½@4
Horseradish, lb. 15
Lettuce, cr. .....75@80
Onions, green, doz. .....25@30
Peas, Tel., lb. .....13@14
Peppers, Chili, bx., 40; Bell, lug 40
Tomatoes, lug .....1.00@1.25
Turnips, doz. 40
Watercress, doz. .....35@40

FRUITS

Wholesale prices:
Apples—King David .....2.25@2.50
Maiden Blush 3.00
Bellefleurs, bx. .....1.75@1.85
Newtown Pippins .....1.35@1.50
Cantaloupes — Tip Top best, 1.25@1.50; Paul Rose, 1.75; cabbage crates, Tip Tops and Pineapples, 3.25@3.50; White Rinds, 3.00@3.25; Casabas, 3.25@3.50.
White Rose, lug .....1.00@1.10
Crabapples, lug .....1.35@1.40
Figs, lb. .....5@6
Grapes — Lb.: Home-browns, best, 4; Muscats, 3; Liberty, 3; Tokays, 4@5; Cornichons, 5; Rose of Peru, 3@4; Black Morocco, 6; Red Emperors, 4; four-baskets, best Concords, 1.25@1.35.
Nectarines, lb. .....5@6
Peaches—Home-browns, Curry Seedlings, 1.30@1.40 per lug; Salways, 1.25; Phillips Clings fy., 1 50; smaller low as 1.00@1.25 per lug box, loose 3@4 lb.
Pears—Bartletts, 2.75@3.00 per packed box. Home-browns, various varieties, lb., 3@4; Beaumont and Hemet Bartletts, loose, 3@4 lb.
Quinces, lb. .....3@3½
Watermelons, lb. .....1½@2

CITRUS

Lemons, packed, 4.75@5.00; loose 3.75@4.00
Oranges — Valencias .....7.75@8.50
Grapefruit .....3.50@5.00

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....18@20
Amber extracted 16
Fancy white comb, per case 6.50
Comb lt. amber, per case.....5.00@6.00
Beeswax, lb. .....32@34

BEANS

Price to retailers, cwt.:
Lady Washington 11.25
Navy 11.25
Pink 8.25
Tepary 8.00
Red Mex. 9.00
Lima 12.75
Blackeyes 7.75
Garbanzos 11.00
Soy 8.00
Lentils 21.06
Kidney 12.00
Henderson Bush Lima 10.50

HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A.:
Tame Oat .....25.00@27.00
Volunteer Oat .....12.00@14.00
Wheat .....22.00@25.00
Barley .....22.00@25.00
Alfalfa .....18.00@21.00
Quotations furnished by California Alfalfa Growers' Association, Riverside, California.
No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS

See San Francisco market.

San Francisco Markets

San Francisco, September 24, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:
Two-pound squares, parchment wrapper, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.
Dairy Exchange quotations, lb.:
Extras 63
Prime firsts 55
Prices Extras past week and year ago:

Sept.	17	18	19	20	21	23
'18 ...	58½	59½	60	60	62	63
'17 ...	44½	45½	45½	46	45½	..

Rcts. wk. ending Sept. 23, 323,200 lbs

CHEESE

Dairy Exchange quotations:
Cal. Flats .....30@30½
Cal. Y. Am. 31
Ore. Y. Am. 30½
Jack Cheese, full cream 28

EGGS

Dairy Exchange quotations:
Extras 60½
Selected Pullets 53
Prices Extras past week and year ago:

Sept.	17	18	19	20	21	23
'18 ...	61	60	58	58½	59½	60½
'17 ...	47½	49½	49½	47½	48	..

Rcts. wk. ending Sept. 23, 8590 cases.

POULTRY

We quote to producers, lb.:
Per lb.: Large hens, 35@36; Leghorn hens, 29@31; broilers and fryers, ¾ to 1½ lbs., 45@50; 1½ to 2 lbs., 36@38; 3 lbs. and over, 35@36; old roosters, 22@23.
Ducks, live, 27@30.
Geese, 23@24.
Belgian hares, live. 15-17.
Squabs, doz., 3.50@4.00.
Turkeys, live, 33@36.

LIVESTOCK

Prices gross weight:
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.
Steers, lb., 10@12; thin, 8@9; cows and heifers, 6½@8; thin, 4@5; calves, 6@11.
Sheep—Lb. gross weight: Wethers, 11½@12; ewes, 9@9½; lambs, yearlings, 12@12½; milk, 14@14½
Hogs—Hard grain fed, weighing 100 to 140 lbs., 18; 140 to 300 lbs., 18½; 300 to 400 lbs., 18.

POTATOES

Wholesale selling prices at wharf, cwt.:
River; new, cwt. .....1.85@2.40
Mendeville .....2.50@2.65
Sweets, lb. .....4@4½

ONIONS

Wholesale selling price on wharf, cwt.:
Australian, Brown and Yellow..1.25@1.50
Wax .....1.75@2.00
Garlic, new, lb. .....12½@15

VEGETABLES

Wholesale selling price:
Beans, String, lb. .....7@10
Limas, lb. .....5@6
Carrots, sk. .....75@85
Corn, green, sk. .....1.50@3.00
Celery, cr. .....3.00@3.50
Cucumbers, lug .....75@1.00
Pickling, lb. .....3@4½
Egg Plant, lug .....85@90
Lettuce .....1.00@1.25
Okra, bx. 50
Onions, green, bx. .....65@75
Peas, lb .....7@9
Peppers, Bell, lug, 75@90; Chili....50@65
Rhubarb, bx. .....1.00@1.25
Squash — Summer, lug .....50@1.00
Cream .....75@85
Tomatoes, lug .....1.25@1.75
Pumpkins, sk. .....85@90

FRESH FRUITS

Apples — Gravenstein .....1.25@2.50
Bellefleur .....1.50@2.00
Jonathan .....1.75@2.50
Bananas, lb. .....7@7½
Berries—Ch.: Strawberries, 7.00@10.00; raspberries, 8.00@11.00; blackberries, 8.00@9.00; huckleberries, lb , 15@17½.
Cantaloupes — Turlock ponies and Standards, 75@1.25.
Figs, single .....50@60
Honey Dew Melons, cr. .....1.50@1.75
Grapes—Cr.: Seedless, Tokay, Black Prince, Malaga, Cornichon, Isabella, 85@1.00; lug, 1.25@1.75; fy. Muscat, 1.75@2.00.
Nectarines, cr. .....50@1.00
Peaches, bx. .....85@1.00
Pears, Bartlett, bx. .....1 75@3.00
Plums, cr. .....1.25@1.50
Persimmons, bx. .....1.50@2.00
Pomegranates, small lug .....75@1 00
Pineapples. doz. .....4.50@5.00
Quinces, lug .....1.00@1.25
Watermelons, lb. .....1¼@1½

CITRUS

Lemons, per box, fancy, 3.50@5.50; lemonettes, 2.50@3.50; oranges, 7.50@8.50; grapefruit, 5.00@6.00.

DRIED FRUITS

Raisins: Associated prices 1918 are:
Muscats: Packages seeded, fancy, 36-16s, 9.625; fancy, 48-12s, 7.75; choice. 36-16s, 9.125; choice, 48-12s, 7.375. Bulk seeded: 25-lb. Bakers, 8.00; 25-lb. fancy. 8.85.
Thompson Seedless; packages recleaned, 48-16s to case, 9.90; bulk, recleaned. 36-12s to case, 8.00; package, recleaned. 25-lb. boxes, 9.25. Sulphur bleached — northern stock: Bulk, 25-lb. boxes, choice, 10¼; bulk, 25-lb. boxes, fancy, 10¾; bulk, 25-lb. boxes, extra fancy, 11¼. Soda dipped — northern stock — Bulk, 25-lb. boxes, 10.
Loose: 1-crown, 25 lb. boxes, 8½; 2-crown, 25 lb. boxes, 7½; 3-crown, 25 lb. boxes, 8; 4-crown, 25 lb. boxes, 8¾.
Layers: 3-crown, 20 lb. boxes, 1.85; 3-crown, 20 1-lb. trays to box, 2.00; 4-crown, 20 lb. boxes, 2.10; 6-crown, 20 lb. boxes, 2.95; 3-crown, 10 lb. boxes, 1.05; 4-crown, 10 lb. boxes, 1.20; 6-crown, 10 lb. boxes, 1.65; 3-crown, 5 lb. boxes, .65; 4-crown, 5 lb. boxes, .70; 6-crown, 5 lb. boxes, .90.
Sun-Maid clusters, 20 1-lb. cartons to box, 2.35.
Imperials, 4 5-lb. cartons to box, 3.40.
Vineyard run, 50 lb. boxes, 3.90; 100 lb. boxes, 7.50.
Sultanas. Packages, recleaned, 48-16s to case, 9.65; bulk, recleaned, 25-lb. boxes, 9.00.
Peaches — California Peach Growers quotes opening prices for 1918 crop f. o. b. factories California. Prices guaranteed to December 31.
Bulk basis and boxes unfaced 1 and 2 cents more.

	Practically Peeled	Yellows (Old style)	Muirs (Old style)
Standard	12⅞c	11¼c	11⅜c
Choice	13⅜c	11¾c	11⅞c
Fancy	14⅜c	12½c	12⅞o
Ex. Fancy	15½c	13¼c	14c
Slabs		10¼o	

Prunes and Apricots. The Prune and Apricot Growers' Association have named following prices on apricots:
Standards 9½
Choice 13
Extra Choice 14½
Fancy 16
Extra Fancy 17½
Extra Moorparks 19
Slabs 11
Cash on delivery price on all grades will be 8 cents with the exception of standards and slabs on which it will be 6 cents.
Prunes: The government will take all the 50-60; 60-70; 70-80 sizes. The quotations sent to the trade last night are as follows:
The bulk prices will be:

Sizes:	Price per lb.
20-30	17
30-40	10¾
40-50	10
50-60	9
60-70	9
70-80	8¾
80-90	8¼
90-100	7¾
100-120	4¼
Above 120	4¼

One cent per pound, and one and one-fourth cents per pound will be added for 50 and 25-lb. boxes.

ALMONDS

The Almond Growers' Association has established opening prices as follows per pound:
Nonp. 27½
I.X.L. 25½
Ne Plus 24½
Drake 20
Outside dealers have named prices above these quotations and it is understood association stock is practically closed out and prices withdrawn.

BEANS

Jobbers' prices, cwt., recleaned:
Limas .....13.10@13.25
Bayous .....7.50@7.75
Small Whites .....Nominal
Large Whites .....Nominal
Mexican Reds .....7.75@7.90
Blackeyes .....6.75@7.00
Pinks .....6.90@7.10
Red Kidney .....Nominal
Cranberry .....Nominal
Teparies .....7.50@8.00

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....17@20
Amber extracted 16
White comb, cs. .....4.50@6.00
Light amber comb, cs.....3.50@4.00
Beeswax .....32@34

HAY

Under date of September 20, Scott Magner & Miller says:
Receipts past week, 670 tons. The heavy decrease in receipts is easily accounted for when one considers the abnormal rains last week were from 6½ inches down to a trace in different sections. This in itself would stop shipments of hay even from warehouses to say nothing of shipments from the field. The rains have gone through piles of baled hay from top to bottom and rendered most of it practically valueless, for unless it is fed up within a few days after becoming wet it will heat and destroy itself; especially is this the case if it is put in box cars for shipment where the air cannot get at it. Again, if this wet hay is piled up in a barn it is liable to create spontaneous combustion; hence it must be left out of doors. Even with these small receipts there is no demand; everyone seems to have as much hay as he requires for the present Referring to the hay which is still in stack, it may be that considerable can be saved providing the hay which is wet is carefully thrown off and good weather prevails for the baling of the balance, but if a handful of wet hay is pressed into a bale of the dry, it will heat the whole bale in a very short space of time and ruin it. Therefore, it behooves those who have hay in stacks not to attempt to bale it until weather conditions are favorable and then only after they are sure they have taken off all of the wet portion.
We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market — for prices to consumers charges of cartage, commission and handling must be added according to conditions:
Fancy Wheat Hay
(large 5 wire bale) .....26.00@27.00
No. 1 Wheat or Wheat and Oat Hay .....23.00@25.00
No. 2 Wheat or Wheat and Oat Hay .....20.00@22.00
Choice Tame Oat Hay .....24.00@26.00
Other Tame Oat Hay .....21.00@23.00
Wild Oat Hay .....19.00@23.00
Barley Hay .....19.00@23.00
Alfalfa, first cutting .....16.00@20.00
Alfalfa, second cutting .....22.00@24.00
Stock Hay .....18.00@21.00
No. 1 Barley Straw, bale .....50@80

GRAIN AND FEED STUFFS

Wheat—Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard white—	Per cental.
No. 1	3.63⅝
No. 2	3.61⅛
No. 3	3.55
Soft white—	
No. 1	3.63⅝
No. 2	3.58 1-3
No. 3	3.51 2-3
Club and Sonora—	
No. 1	3.60
No. 2	3.55
No. 3	3.48½

For sacked grain add 9 cents per bushel of 60 pounds to above prices. Deduction of three-fourths of a pound is made for weight of standard grain bag. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to its merit.
Barley — No. 1 feed, 2.37½@2.45 per cental; milling, 2.55@2.60.
Oats — Red feed, 2.55@2.65 per cental for ordinary and 2.75@2.85 for choice; seed do, 2.90@3.10, with recleaned at 3.20@3.40; black, 2.50@2.65 for feed and 3.00@3.25 for seed; do, recleaned, 3.50@3.75.

SEEDS

Prices in round lots, lb.:
Millet, recleaned .....5@5½
Flax .....8@8½
Hemp .....5½@6
Rape .....2½@5

Citrus Fruit Market

Los Angeles, September 25, 1918.

Ten dollar sales of Valencias are still being made, though the price more generally ranges between six and nine. A few yet to go will be cleaned up at long prices.
The lemon market is still very quiet; large numbers of foreigns are being received and the price is ranging low, around three to four dollars, a few sales being made as high as five.

Shipments

Shipments of citrus fruits from Southern California to date since November 1, 1917: Oranges, 13,725 cars; lemons, 5492; total, 19,217. To same date last year: Oranges, 38,420; lemons, 7463; total, 45,883. From Central California to date this season: Oranges, 2536; lemons, 115; total, 2651. To same date last season: Oranges, 4665; lemons, 164; total, 4829. From Northern California this season: Oranges, 203; last year same date, 845.

ONE WAY OF ASSISTING IN FOOD CONSERVATION

One of the first duties of the officials and people of the United States in the present food conservation campaign is to allow no food products to go to waste. The following note received from G. R. Gorton exemplifies this idea in such a way that we consider it to be worthy of greater publicity.

"During the first picking of Muscat grapes the writer had occasion to seize and hold at one of the local commission houses a considerable quantity of grapes which tested below the standard set by law. The fruit had been picked by a grower who professed ignorance of the law—although this was not his first experience with grape picking. However, the fruit was too green for table use, and the question of suitable disposal arose. I suggested selling for jelly purposes and at the request of the grower communicated with one of the local firms. This manufacturer stated that he did not ordinarily use Muscats for his products because they are too sweet, but upon being informed that the lot had been condemned for the very opposite reason but were sound and otherwise good, consented to make a test with one box to see if the fruit could be utilized. The test was satisfactory and the deal was made.

There was probably nothing new or startling in this incident, but at the present time it might serve to remind those who are dealing in foodstuffs that it is in accord with the national policy of food conservation not to allow anything of the sort to go to waste if it is possible to prevent it. At the same time it is possible to comply with the provisions of the laws which have been enacted for the protection of the public, and which it is the sworn duty of all horticultural officials to enforce."

More Sugar Beets

THE policy of the United States food administration for California regarding the planting of sugar beets within the state for the coming year, and new maximum prices on wet and dry sugar beet pulp, yere announced today by Federal Food Commissioner Ralph P. Merritt.

Fixing of maximum prices on beet pulp is another step toward protection of the dairy herds of California from an actual world wide shortage of dairy and cattle feeds and resulted from a recent conference in Washington with the refiners. The new authorized prices follow:

Wet pulp direct from the factory, 80 cents per ton; wet pulp from the silo, $1.25 per ton.

Dry pulp, $40 per ton f. o. b. factory, including commission of wholesale distributors.

These prices are lower than those prevailing at the beginning of the season. Priority in shipments will be given for dairy demands.

Outlining his policy regarding the planting of the coming year's beet sugar crops, Merritt said:

"A larger output of sugar is imperative but the food administration will not urge beet growers to make sacrifices from patriotic motives by planting sugar beets unless the refiners whose operations warrant it will pay the producer such a price as will return him a reasonable profit.

"The government has no power to guarantee the refiners a price for next year's sugar and consequently has no power to force the refiner to pay the producer a fixed price for his product. However, all indications point to a sufficiently high price for the refined product to make it good business for the refiner to offer additional encouragement to farmers in the shape of a stimulative price."

Blasting Dry Farming Land

It is the heavy soils that most frequently are dry farmed, because they do not irrigate well by usual methods, and thorough deep breaking of these soils will help materially in making the dry farming method a success. There are light soils dry farmed, of course, but these can not be helped through blasting, especially when they are of coarse and open texture, like sand, and when they are loose enough several feet down to permit free penetration of roots and water.

The blasting, followed by correct related treatment, has its chief bearing on the capillarity of the soil, on its manner of taking up and holding water—two distinct things.

When a soil is in the best possible granular condition, moisture will pass up and down and in other directions through it as fast and as freely as oil passes up a lamp wick. There is no flow of water; just a transmission of tissue, thin films from soil particle to soil particle. In the granular soil any moisture applied to the surface spreads rapidly downward in this manner, penetrating all through the soil evenly. The depth to which it penetrates may be surmised from examinations of granular irrigated land, which often becomes wet down 20 feet. The rapidity of the capillary movement can be gauged, also, by the fact that this 20 feet of wet ground will be dried out almost completely by surface evaporation during four to six weeks of dry weather if the surface is not mulched in some manner.

But this movement of water takes place only when the ground-wick is "drawing" well. If the wick be squeezed at any point, the moisture movement slows up there to a fraction of what it should be. Now, the natural puddling of fine soil corresponds almost perfectly to squeezing of a lamp wick, and puddling always occurs in soil left to itself. Rain falls. For two inches, four inches, or six inches or deeper into the ground there is a saturated condition, if only for a few minutes. There is a current of free water, which carries soil particles together and leaves them almost as solidly in a block as though cemented. The result is that the wick is squeezed at this point so much that further rain falling on the surface is not carried down to the deeper soil freely, nor is the moisture already there allowed to rise freely. The squeezing may take place at any point below the surface. Frequently the entire top two feet is in this condition, and the under soil little better.

The storage of moisture depends on the completeness of granulation of the soil. When all the particles lie loose so as to hold films of moisture, and are kept apart by sufficient humus and other organic matter, each foot in depth of soil can hold moisture enough to make a layer of water one to three inches deep. To hold enough for the largest crops then is only a matter of providing additional depth of mellow, granular soil. If the soil is not granular and fine, the one to three inches of water it will hold per foot in depth must be scaled down to half an inch, or a smaller fraction.

It thus becomes apparent to anyone who examines the matter intelligently that good tilth down deep is the nub of the whole moisture supply matter in dry farming. Blasting of heavy soils opens them up and fines them in a manner impossible to do in any other way except by hand digging. If the blasting is accompanied by the growing of crops which leaves big quantities of root-humus in the under soil, and, further, if cover crops are turned down in quanitty, the loosened and fined soil will be kept from puddling, and moisture conditions will continue to improve as the seasons pass. Surface mulch cultivation, of course, is absolutely essential to prevent the escape of the stored moisture, for soil in good condition will spend its moisture through evaporation faster than soil in poor condition.

Everyone trying to manage soil in a dry section without irrigation should apply these principles. It is well to begin with a small area, blasting the family garden and an acre or two of the best field, for instance. Experience will demonstrate many details that can not easily be described.

TRACTOR POINTS

The farm tractor is essentially a one-man outfit, and its utility to the farmer lies partly in the fact that with it one man controls a large amount of power. One man can hardly handle more than four horses in a team in ordinary farm work, but he can easily handle a tractor that delivers 30 horse power at the draw bar. It is very evident from this that the larger the tractor the greater the saving in man labor. One man and a small tractor may easily handle three plows. This work done with horses would require probably two teams and two drivers. One man and a large tractor can possibly handle eight or ten plows. In this instance the one man takes the place of the four or five drivers that would be needed for the teams.

Whether the job be drilling or disking, harrowing or seeding, it is seldom necessary to have more than one man with the outfit. If the tractor for plowing is equipped with a self-steering device, the operator has practically nothing to do except to watch his plows, and these require very little watching.

Time Spent in Caring for Tractor

When compared with what a horse expects, the tractor surely does not ask much of its owner. It requires no valet service, does not have to be watered and fed three times a day, curried and rubbed, nor does it require its stable to be cleaned each morning. Its feed, in striking contrast to what the horse eats, can be stored anywhere without attention. As for itself, when it stops all attention and care stops, while the horse, through the long winter months of idleness, requires feed, feed, feed, and care all the time. All the tractor asks is an occasional overhauling, and surely there is nothing disagreeable about this work when compared with the services which the horse requires.

Cost of Housing Farm Tractor

A tractor needs only a shed for protection just large enough to permit the outfit to be run in. This is in striking contrast to the expense of barns required for horses. On the basis of 750 cubic feet of space, which it requires to correctly stable one horse, eight horses would require 6000 cubic feet. A tractor of about the same working capacity would only require one-eighth as much space. Feed for each horse requires about 1400 cubic feet, 100 feet for grain and 1300 for hay and straw, or 12,000 cubic feet for eight horses. The feed, that is, fuel for a tractor, is merely a tank and some cans placed wherever convenient.—Farm Implement News.

LOYALTY PLEDGE

Every member of the recent class graduating from the University of California signed a pledge of loyalty to the United States. The university now demands of every member of the faculty the signing of the following pledge before the beginning of the new year.

"As an American citizen I hereby pledge my abiding loyalty to the United States of America and my unqualified devotion to the right and to the victory of the cause for which she fights in the present war, and I understand that my status as a member of the faculty or employe of the University of California is conditioned upon the truth of this statement."

WEATHER CONDITIONS

San Francisco, Cal., September 21, 1918.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	.02	1.83	.83	62	52
Red Bluff	.00	7.08	.37	100	52
Sacramento	.02	3.58	.18	88	56
San Francisco	.00	2.53	.08	70	54
San Jose	.10	6.33	.22	78	54
Fresno	.00	.01	.04	92	58
San Luis Obispo	.00	.61	.23	76	56
Los Angeles	.00	.22	.00	80	60
San Diego	.02	.19	.00	74	64

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With This Simplex
Sent on 10 Days' Trial
Insures crop success in wet land. Saves hillsides. Digs V-shaped ditch in any soil. Adjustable to narrow or wide cut. Mostly steel. Reversible. Equals 100 men. Write for free book, prices, terms and money-back guarantee.
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B. HAYMAN & CO., Los Angeles.
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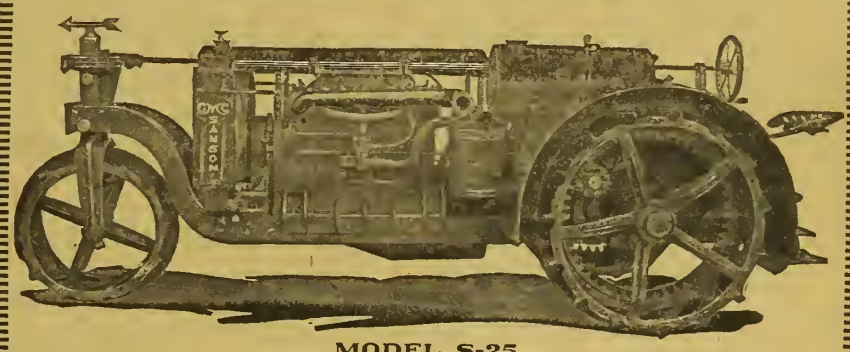

MODEL S-25

SAMSON SIEVE-GRIP TRACTORS

GMC TRACTORS GMC TRACTORS

In the fight for greater food production, enlist a GMC SAMSON SIEVE-GRIP TRACTOR. Thousands of its users secure maximum crops. Its years of achievement are convincing.

The GMC SAMSON SIEVE-GRIP TRACTOR is built to last. It is always ready for the job. It will do your work, day after day, cheaper, better and quicker than any other power.

The GMC SAMSON SIEVE-GRIP TRACTOR has many superior features. Its Sieve-Grip wheels give traction on any surface and do not pack the soil. Its Nodust-Moisto-Rizer protects the motor from all dust and grit. Its lubricated Roller Pinions insure minimum friction loss and deliver maximum power to the drawbar. Its Automatic Control assures simplicity of operation and provides any desired set speed without deviation, regardless of load, to the tractor's maximum capacity.

Let a GMC SIEVE-GRIP TRACTOR help you serve effectively.

Ask the man who owns one or send for our illustrated booklet, Better Farming.

Samson Sieve-Grip Tractor Company

DIVISION OF

General Motors Corporation

STOCKTON, CALIFORNIA

"Can I get as many eggs from my hens as I should?"

Surely!

IF you have not received a copy of the 1918 edition of our handbook—"Makes Hens Happy"—we want you to have one. It is a splendid guidepost to success in the poultry business; and no one knows so much about poultry-raising that he can afford to overlook the big money-saving and money-making suggestions embodied in this booklet.

There has been such a tremendous demand for this booklet, however, that we cannot say how long the supply will last. But—this much we can say: If you fill out the coupon below and mail it today—we will promise to get your copy to you post-haste.

Mail the coupon NOW!

Stock and Poultry Food Department,
SPERRY FLOUR CO.,
152 Weber Ave., Stockton, California.

Gentlemen:

I shall be glad to have a copy of your handbook—"Makes Hens Happy"—which is to be sent to me FREE.

Name .....

Address .....

After all, the problem simmers down to feeding. If you let the hens loll around waiting for *them* to make use of the embryo eggs that are in them—you won't find it very profitable waiting.

You know that Nature provides each laying hen with just so many eggs in embryo. And—if you leave it to Mrs. Hen she will take six or seven years to produce her quota of eggs. And, incidentally, she will leave *you* high and dry—by the time you have paid for her feed and keep all that time. Not much in that—is there?

Your job, then, is to see that the hen produces her *full supply of eggs in two or three years*. And—the biggest part of your job is to see that she gets the proper feed—the balanced ration—she needs to give you the best (and the most) that's in her.

Quite a problem—you say? It is—if you waste a lot of time, money and energy experimenting with hand-mixed feeds and mashes. But it isn't—and it won't be—if you do what thousands of successful poultrymen are doing today: if you bank on Surelay.

Surelay contains *sixteen* distinct ingredients that every hen in your flock needs to make her a profit-producer. It is made so good, so wholesome, so tasty, that every time Mrs. Hen takes a peck of Surelay she is eating a little of everything that goes to make up an egg.

There is nothing mysterious about Surelay—or what it will do. You know what to expect of it—day in and day out. You know that it contains just the proper proportion of *protein* for the white—just the right amount of *fat* for the yolk—just enough *lime* for the shell.

And, what's more, we make no secret of it. You will find its analysis printed on the back of every sack. And remember: what's *on* the sack is *in* the sack, and that's what makes the *eggs*.

So—what's the use of bothering with hand-mixed feeds that are only guesswork at the very best? Where's the dollars-and-sense? Why not "cash in" on the experience of countless poultrymen who have found that Surelay—a uniform, high-grade, perfect-balanced ration—is *always* the most economical, convenient and dependable feed you can use?

[Be sure to look in your Surelay sack for the Certificate that entitles you to our 1919 Surelay Egg Record and Calendar]

STOCK AND POULTRY FOOD DEPARTMENT

SPERRY FLOUR CO.

STOCKTON, CALIFORNIA

SURELAY

"A Sperry Product"

C A

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — October 5, 1918 — No. 14

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OCT 9 1918

The Fair Beautiful and the Fair Practical

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

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Saturday, Oct. 5, 1918

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscribers must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

The beautiful scene on the cover of this issue gives a faint idea of some of the beauties to be seen at the Liberty Fair to be held in Los Angeles. The fair started with the idea of being strictly a utility or educational exhibit of California's products, and with the idea of securing greatest possible production from California's rich acres. Nor has that idea been given up, and the exhibit will be truly educational. However, the management rests in the hands of people with a big idea of the eternal fitness of things, and they have determined that an agricultural fair shall have the beautiful setting which agriculture has in nature. Therefore, the farmer coming to the Liberty Fair to learn how to produce an extra bushel of potatoes to the acre cannot help but be inspired by the setting which has been given to this great show.

DOLLARS TO BE PROUD OF

A Colorado farmer has been figuring a bit and writing a little about true patriotism. He refers to some business activities wherein a little shrewdness and more of cold, calculating cleverness is making some profiteers immensely rich handling the products of other men's labors. For himself, however, he has pride in the fact that some of his dollars which have gone into the treasury of the country to aid in the maintenance of liberty have come from the production of foods on acres formerly idle or, more, from acres made to do 100 per cent service because of more intensive culture and more intensive thinking.

"Why? Because in growing my wheat I have contributed something to the world's welfare. I have tried both ways, and I think I am entitled to speak my mind in the matter. The man who is to feel himself a man must earn his way in the world by definite service. I am not saying that farming is the only way open to him; but it is a mighty good way. There are not many better."

FOURTH LIBERTY LOAN

America is coming up grandly in the Fourth Liberty Loan drive. Some sections have already oversubscribed their quota. The drive is requiring the energy and hard work of millions of patriotic boosters. A walk of a half a dozen blocks on a busy city street early any afternoon carries one by booths and working units. On Monday afternoon this week we saw two of these units working on one block. On one big truck were speakers and singers and surrounding it was a band of some 30 pieces. In the country the canvass is more quiet and equally as effective. Six billions is an awful sum, absolutely beyond the comprehension of any of us, but we may all comprehend that it takes the ultimate effort of every one of us to reach the goal. While there should not be a single American who does not advance something from his means to our government, it is estimated that the participants in this fourth liberty loan will aggregate about 25,000,000, or one out of about every four of our people. The average is small; let every Cultivator reader, not simply the head of the family, but every member of the family take at least one of the Liberty Bonds. The government plan calls for the payment of ten per cent with the application. Other payments to be: On November 2, 20 per cent; December 19, 20 per cent; January 16, 20 per cent; January 30, 30 per cent.

IRRIGATE THE TREES

Many are the complaints every summer regarding little leaf, trees with tops partially dead, "trees blossomed almost white last spring but bloom was small and as later proved, set no fruit," and the like from deciduous orchardists. These complaints are usually accompanied by such indefinite information that no certain diagnosis can be made, but a reasonably shrewd guess in many of these cases is that the trees were deprived of moisture after the fruit had been harvested. The Cultivator has continually called attention to the fact that every tree, even in the perfectly dormant state, needs moisture at its roots. Last year was an especially trying one. No rains came until midwinter and trees which were not heavily irrigated had to stand a period of almost 12 months drouth. Hence there has never been a season when the complaints regarding off condition of trees have been so general as this year. This year some sections of the state have been visited by very heavy rains, and there will be no probability of fall drouth injury. However, there are many sections of the state which have had only light showers. Orchardists and even vineyardists who can command water should see that the coming season's fruit will not be lessened because of withholding water during these fall months.

PLANNING

This season's crops are harvested or in the harvesting, and many have begun their plans for a bigger and better product another year. The planning consists in a bit of serious thinking the evening before and more of serious work in tightening up the bolts and readjusting parts of the artillery of agriculture and laying plans for less of demand on the infantry. This kind of planning is in the air for it follows the precedent established overseas. Gen. Foch is saving his men and wasting thousands of tons of ammunition. The results are entirely satisfactory. The farmer must follow the same course and let gasoline do it.

The Liberty Fair's opening day, which is Discovery Day, October 12, was chosen some months ago before the management had any idea that President Wilson would name Discovery Day, or Liberty Fair Day, as a nation-wide Liberty Day. It is merely a coincidence and a most fortunate one for this fair from which so much is hoped.

Liberty Day will be observed in every hamlet from the Atlantic to the Pacific. We believe the day will be a holiday everywhere. It is a year and a half since America's entrance into the war, and those of us who were disappointed with the apparent deliberateness with which our troops were sent to the front now have reason to praise the wisdom of those who had direction of this greatest of all world wars. America is now striking triphammer blows through efficiency gained in 18 months of intensive training, which may prove fully equal to that of the Huns after 40 years of training. We believe the power of the blows of the Allies will be more apparent on Liberty Day than at this moment, and we predict America will be able to send up a most joyous shout on that day.

WALNUT PRICES

Walnut prices have been named that are satisfactory to the majority of the growers. A few have felt that a slightly higher price should have been made on Fancy Budded, which are 31½ cents. Number One Softshells, which cover by far the greatest percentage of the crop, are priced at 28 cents. While these prices may seem high to the consumer, when the old-time prices of nine, ten and eleven cents are considered, the walnut growers can still show that, nutritive value considered, they are within bounds of other foodstuffs. A still higher price may be secured for Franquettes, Eurekas, and other fancy varieties. These are sold on sample, and the price for the few of these high-grade nuts will be matter of barter and sale.

The walnut industry never was on the solid foundation it is today. To a large extent the prices which were named last Tuesday are the result of war conditions, but the quantity of the nuts and the general prosperity of the industry comes as the result of years of cooperative organization. At its beginning the walnut association was not strong in its working plan, but years of watchful care on the part of growers with the true cooperative spirit has made it one of the strongest organizations in California. It is at the same time the most democratic of organizations, both as to its dealings with consumers and its own members.

The output will total around 13,000 tons, and the state never grew a finer nut than the average of this year.

This Week's War Notes

The British have occupied Haifa and practically the entire seacoast of Palestine.

Secretary of War Baker has ruled that certain books written by David Starr Jordan and others are not proper reading for men in the army.

Questionnaires are returning to exemption boards, and the number of requests for exemption is surprisingly small. The call for the first quota will be made at once.

The German vice-chancellor, Von Hertling, has resigned and in accepting his resignation the kaiser does so with regret but "I desire that the German people shall cooperate more effectively than hitherto in deciding the fate of the Fatherland."

The Soviet troops are retiring from northern Russia. Moscow has admitted that the northern and eastern fronts find the Czecho-Slovaks advancing at every point. The Bolsheviki are in precipitate flight from the Allied troops advancing south from Archangel.

The fight against Spanish influenza has been taken up by various states and the nation. California camps are as yet entirely free from the dread disease. Many deaths have occurred in the East. Scientists have announced the discovery of an antitoxin which will control it.

The Fourth Liberty Loan drive started on Saturday. Some sections exceeded their quota on the first day. This was exceptional, however, and the greater number of communities find that a fight is before them to secure the full amount. Organization and methods of work are far more intensive than in any preceding campaign.

"Turkey is doomed" is the belief of all close observers of the war situation. Bulgaria's collapse has opened the way direct to Constantinople, and the Turkish army in Palestine is weakening every day. Forces totaling 10,000 surrendered on Sunday and Monday. Whether Gen. d'Esprey, the French commander chief of the Allied forces in Macedonia, will make his first drive toward Constantinople or on the Hungarian southwestern front remains to be seen. Presumably Constantinople will be mopped up first.

Many German supply bases are now endangered by the continual pressure on the western front. The old Hindenburg line is practically wiped out from the North Sea to Metz. American activities since the wiping out of the St. Mihiel salient have been confined to local actions and to strengthening the line captured. Farther north the French have made some bold maneuvers and have captured many important centers. The British and Belgians are hammering harder than ever in Flanders. All troops, however, are meeting stronger resistance on the part of the Teuton troops.

Bulgaria has surrendered. The drive on the Macedonian front continued until English, French, Italian, Serbian and Greek troops crossed the border into Bulgaria. The morale of the Bulgarians and of their Austrian and German helpers has been entirely destroyed. The final break came on Monday when after a conference in Saloniki the Bulgarians agreed to unconditional surrender. One stipulation of Sofia was that America should participate in final peace decision. Their territory is entirely under control of the Allies for marching through or any other use. The Bulgars lay down their arms which are to be under charge of Allied troops until final peace is declared. Absolutely no political or boundary questions were touched in the amistice.

After Many Years---A Fair in Los Angeles

A WAR-AID fair, and one which will be a factor in present world conditions is the aim of the management of the First California Liberty Fair which will be held in Los Angeles for 15 days beginning October 12.

When Lord Rhondda was told that America's surplus wheat of the crop of 1917 had all been shipped to the Allies, he wired to Hoover: "The war is lost." It was yet months until the next harvest, but Hoover knew the temper and the spirit of America, and he assured the Allies that American wheat would continue to come. The problem was passed back directly to the American people, and out of the half year's supply Americans' self denial netted 140,000,000 bushels of wheat. That wheat saved the Allies; it saved the war; it saved the world's liberties. So America has learned the power of conservation.

Then there is that other war aid, eually as important as conservation, greater production, and equally as nobly have American producers answered that appeal. Of course there have been some failures, but almost as one man the general farmer, the fruit grower, the live stock producer have been intensely patriotic. With every call to the colors, the labor situation has grown more and more strenuous, but the farmer and his wife and his daughters have worked harder and have turned to farm power and to every other means to increase production. This increase has been aided by the government through a wealth of information sent out in circulars and bulletins. State institutions and many large corporations have also aided in this campaign. The farm papers have done their share. And now come the demonstrations and fairs to add to the sum total of information and inspiration.

The state fair and some of the district fairs have passed. Spectacular features have not been entirely eliminated, but there has been a far more serious tone, and we have heard many an expression indicating determination to return to the farm and produce more and better than ever before.

Nearly two years ago the people of Los Angeles began the discussion of a 1917 Southern California fair. The point was made that it is a long distance to the state fair at Sacramento. In the city of Los Angeles is a fair ground on which sixth district fairs were held for many years. These were discontinued some 15 years ago and the grounds since have been maintained as an Exposition Park. On these grounds there have been maintained a fine mile racetrack with grandstand, a permanent state exposition building costing a quarter of a million dollars, a state armory, and another large fireproof building has been constructed by the County of Los Angeles. The discussions led to a determination to hold a fair in the fall of 1917 on these grounds, but almost at the very beginning of making the plans America entered the world war. The board of directors felt that every energy should be spent directly toward the war's ending, and the 1917 fair was called off. As the first year of the war passed and America's need for greater food production was realized, plans for a fair in 1918 were renewed and scores of Southern California's best workers have been busy for months completing plans for this event which will inspire many producers to greater and better production.

The armory will be occupied by a large exhibit of the United States government. Some features of this exhibit will have to do with agriculture, but primarily it will be an educational exhibit as to war's activities. This exhibit alone will attract thousands of people.

The state building on the grounds is being entirely overhauled, its permanent exhibit temporarily removed, and in it will be made exhibits of modern education as exemplified in our public schools and colleges and an exhibit of foods with especial reference to conservation.

The art gallery and museum will be given over almost entirely to fine arts.

In addition to these three great buildings, thousands of carpenters have been busy for some months building both permanent and temporary buildings. These buildings have been designed by F. B. Davison and Charles Wilson, both lifelong exposition men. These men have been at every exposition held in this country for the past 30 years. Their skill, with a very moderate expenditure, has resulted in a wonderfully beautiful exposition setting. We think no handsomer fair grounds have been provided for any fair in the West than those of the Liberty Fair in Los. Angeles. While of a temporary nature, these buildings have the happy faculty of looking as if they "belonged."

Permanent and Comfortable

Great grandstand in Exposition Park, Los Angeles, where the first Liberty Fair will be held, October 12-26.

The woodwork is all stained a brown or walnut shade; the panels are painted in buff; and the lattices and lighter features are painted sea green. Nothing will be permitted to have the ramshackle look so often seen in fairs. Even peanut stands must secure the approval of the architect.

The two largest of these buildings, one at either end of the permanent state building, are given up, the one on the west to agriculture and horticulture. Every inch of space in this building has been applied for; it contains over 15,000 square feet. A companion building at the eastern end of the permanent building, also having a capacity of 15,000 square feet, is given up to manufactures and liberal arts. A large number of other buildings, following the lines of those two referred to, but in size more like bungalows, are erected in various parts of the grounds. These are given over to forestry, fisheries and game, 3000 square feet; floriculture, 8000 square feet; University of California, 2000 square feet; and others of similar size are occupied by educational exhibits of the Red Cross, Y. M. C. A., Y. W. C. A. and other war work organizations.

Hundreds of stalls have been built in the live stock section. Every inch in these has been taken. As the fair covers two weeks, double use is to be made of the stalls by giving them up during the first week to poultry, pigeons and to horses; the second week to cattle, hogs, and sheep. The horse show during the first week is one great event, or rather, a series, and Dr. A. J. Scott, who is in charge, assures us that the events occurring on the dates, October 17, 18 and 19, will be long remembered by every lover of the horse.

In cattle, hogs and sheep C. R. Thomas began his work of securing exhibits at the International Live Stock show in Chicago last December. He has attended many other fairs, including our own state fair, and while the entries are now closed in this division, exact figures cannot be given as to the exact number, but they will exceed 1500 and may reach 2000. A big bunch of state fair champions will be exhibited.

One of the most striking exhibits at the fair will be that of the University of California. One exhibit which promises to prove of exceptional value at this period when labor is apt to prove so scarce, is that of power and farm implements, especially farm tractors. The site for this exhibit has now been changed for the third time. As demands for space chosen came in the first space was shown to be too limited. The location was then changed to the great lawn sloping down from the armory building. This in turn proved inadequate, and the great infield was taken. There will be no demonstration, but O. H.

Continued on Page 346

Fine Arts Building, Exposition Park, Los Angeles

This beautiful fire proof structure was built by the County of Los Angeles and houses wonderfully interesting exhibits of mastodons and prehistoric animals from the La Brea pitch beds, and in addition during the fair this building will have a wonderful exhibit of fine arts.

Agricultural News Notes of the Pacific Coast

Northern California

Rice growers are making war on ducks.

Tehama County's almond crop will be light.

An unprecedented run of salmon in the Sacramento River is reported.

This year's almond crop is practically one-fourth larger than last year.

Three hundred acres of castor beans are nearly ready for harvest in the Sutter tule basin.

Many new warehouses are being built in Butte County to accommodate the increased rice crop.

The Nevada County farm bureau held its second cattle auction at Lime Kiln Ranch, September 25.

Farm Adviser Amundsen of Placer County is advising farmers to do as much early plowing as possible.

One Placer County pear grower, Sidney L. Smith, reports harvesting 94 boxes of pears from two trees.

The early rains damaged so much alfalfa that it is probable the summer's high prices may be maintained.

A rancher of Chico has contracted anthrax from removing the hide from a steer that had died from that disease.

New local farm centers have been organized in Tehama County at Corning, Richfield, Oak Park, and Los Molinos.

Placer County farm bureau meetings; Applegate, October 4; Allen, 7; Weimer, 9; Butcher Ranch, 10; Forest Hill, 10.

The annual meeting of the Sutter County farm bureau has been postponed to November 8. It will be held at Sutter City.

Sacramento Valley pear growers are fearing the heavy rains may start growth on pears and result in serious spread of pear blight.

Amongst those who suffered from the recent rains were the fig growers. Butte County's loss is estimated at from 50 to 75 per cent, due largely to splits.

Because of the light rainfall of the past year some wells in the Sacramento Valley, never before dry, have failed to give sufficient for a full season's irrigation.

The star grape picker of the Women's Land Army is Miss Koski whose record is 105 50-pound boxes of Tokays in a nine hour day. She has been working at Lodi.

The Iron Canyon $30,000 irrigation project, which contemplates damming the Sacramento River at the mouth of Iron Canyon near Red Bluff, will soon be under way.

Earl Dobbs has been appointed farm adviser of Humboldt County to succeed A. H. Christiansen who has held the position since the first appointment to the office. Mr. Christiansen retires to take up private work.

Because of the damage done to grapes by the recent storm Horticultural Commissioner Brosius of Sacramento County has issued an order preventing shipments from the county until newly ripened grapes fit for shipment are produced.

A committee of barley growers has gone on to Washington to confer with the food administration and urge the development of overseas barley trade. It is stated that 750,000 tons of barmust be moved to make room for the ley stored in warehouses in this state rice crop.

Central California

Fresno district fair was held October 1 to 5.

Delta, Kern County, farmers are organizing an alfalfa growers' association.

Many grapes are rotting on the vines because of the continued wet weather.

Prune and Apricot Growers' Association will build a packing house at Los Gatos.

The California Peach Growers has decided to make a payment of eight cents to growers.

Fresno board of health is planning to give tuberculin test to all herds supplying milk to that city.

The government has purchased over 13,000 tons of California dried peaches and 61,000,000 pounds of prunes.

Raisin growers refer to Black Friday, September 13, as the day of $20,000,000 loss to California because of the storm.

John M. Bernstein and Dimmick Brothers of Hanford are shipping pure bred Poland-Chinas to Hacienda Chielian Ranch at Drujillo, Peru.

A gang of 16 firebugs, supposed to be I. W. W.'s, has been rounded up by police officials in Central California.

Kings County dairymen received for dairy products during the month of August a quarter of a million dollars.

The storm loss to the Santa Clara prunes will prevent shipment of entire amount contracted to war department.

Kern County farm centers are asking, and answering so far as possible: "How can we increase our crops for 1919?"

Early apple shipments from the Watsonville district were light, but it is now hoped that late apples will come up to an average crop.

The San Joaquin Valley live stock auction committee of the various county farm bureaus united in the auction sale plan are arranging for fall activities.

The bureau of markets of the U. S. D. A. is furnishing exceptionally valuable market information to raisin growers. A branch has been established at Fresno.

The saving of 40,000 tons of sugar, worth $4,000,000, is suggested as a possibility by proper handling of the wine grapes which war prohibition will prevent from being manufactured into wine.

Kings County creameries paid for butterfat for August: Lucern, 57 cents; L. A. Cry., 56½; Kings County, 56; Riverdale, 56; Central Cal., 56.85; Corcoran Sweet Cream, 58; Swift & Co., 56.65.

Kern County farm center meetings: Kern Delta, October 2; McFarland, 4; Weed Patch, 7; Wasco, 9; Rio Bravo, 10; Edison-Fairfax, 11; Delano, 14; Pond, 16; Rosedale, 18; Tehachapi, 21; Shafter, 23; Arvin, 25.

Dr. Geo. Gordon of Hanford has been appointed deputy state veterinarian. One of his first official acts will be the adoption of measures to control the outbreak of Texas fever tick, said to have occurred in Kings County.

The Tegner farm center of Merced County held its second successful auction sale of hogs last week. Fifty hog growers of Stanislaus and Merced Counties recently divided $11,000 because of a successful fat hog sale. The price paid was around $16.85.

Southern California

Rains have stopped bean threshing, but it is hoped that sunshine will prevent serious damage.

Southern California's walnut output will be close up to full crop. It is thought it may run between 13,000 and 14,000 tons.

One Ventura County bean farmer is employing 10 Land Army girls in piling beans. The girls are paid 35 cents an hour.

A Westminster, Orange County, farmer has invented a rake which cuts and piles beans without the necessity of using a fork.

Imperial Valley growers anticipate a great increase in cantaloupe output next year; it is possible 20,000 acres may be planted.

Ventura County's farm centers are discussing "Win-the-War" measures and especially how can Ventura make great crop increase for 1919.

All California has shipped over 21,000 cars of oranges since November 1, 1917, which is less than half last year's shipments to same date.

Horticultural Commissioner Brock of Ventura County is making persistent fight against mealy bug and has quarantined some sections where the infestation is worst.

The board of supervisors of Imperial County has appropriated $3000 toward the expense of a county exhibit at the Liberty Fair to be held in Los Angeles, October 12-26.

The Gardena Canning Company plant was closed for two days for technical violation of the food administration rule that fruit contracted for may not be purchased by another party.

The California Association of Dairy and Milk Inspectors will hold a meeting in Riverside, October 16 and 17. Dr. Maynard Rosenberger of Los Angeles is president and J. Kooke is secretary.

J. P. Dargitz, field representative of the Public Employment Bureau of California, in a recent speech before the Santa Ana chamber of commerce recommended: "Offer an idle man work and if he refuses arrest him."

Southern California has grown this year over 2000 acres of Mexican chili; last year's production was only 600. Sweet peppers also nearly doubled in production. The total grown in the southern end of the state of all kinds of peppers is 5300 acres.

Ventura County board of supervisors have appropriated $3200 for fire protection equipment. It is to consist of six two-wheel trailers of 1000 pounds capacity, carrying five two and a half gallon chemicals, ten gallon water cans, a couple of dozen of shovels, hoes, mattocks, etc.

Mexican almond harvesters at Banning, Riverside County, having gone on strike, the growers are employing Los Angeles women workers. It is estimated that community will produce 300 to 400 tons as against its 90 ton output of last year, and the prices are the highest ever.

Local meetings of Stanislaus farm bureau will be held at Jennings, October 2; Mt. View, 4; Hughson, 7; Mitchell, 8; 9, directors' meeting, Modesto; Thalheim, 9; Tegner, 11; Denair, 14; Hickman, 16; Fairview, 18; Orange Blossom, 19; Wood Colony, 21; Claus, 23; Ceres, 24; Patterson, 25.

The Coast and General

Utah reports its alfalfa seed crop as nearly all cut.

Clark County, Washington, has an unusually heavy prune crop.

The Isle of Pines Appeal reports new crop of grapefruit already going to market.

Utah's Jonathan apple crop is nearly all picked; it shows average yield and very high quality.

Idaho reports warm sunny weather very favorable to maturing late crops. Apple picking is general.

Farmers of Adams County, Washington, are cutting and stacking Russian thistle for stock feed.

California's corn crop is the largest ever, and it is producing exceptionally high grade corn meal.

One port of Cuba had on August 31, 800,000 bags sugar (325 pounds) ready for shipment as compared with 447,000 bags on same date 1917.

Washington reports hop picking as finished and evergreen blackberry picking as progressing but getting light output owing to drouth.

California recently shipped its first barley into Garfield County, Washington. That county's barley crop this year was almost a total failure.

The state penitentiary at Walla Walla, Washington, maintains a creamery and cheese factory. The product is all used in the state institution.

Bartlett pear growers of Hood River, Washington, find their fruit much larger than any preceding year. Some exceptionally big ones are tipping the scales at 20 ounces.

A critical feed situation confronting the live stock men of Oregon has made necessary the organization of a state feed committee which will work in connection with the Oregon agricultural college.

The cotton textile industry of Italy, which was becoming very important before the war, has been seriously affected by the shortage. The greater portion of her raw cotton came from the British East Indies.

The Northwest is making a strenuous "More Poultry" campaign. Poultrymen in Oregon propose to add at least 250 new members to the National Poultry Association. Prof. Jas. Dryden is leading the campaign.

The country's sweet potato crop this year will not exceed 81,000,000 bushels. This is smaller than that of last year by about 7,000,000. Alabama is the country's greatest sweet potato grower, with an output of 15,800,000 bushels.

Puyallup Valley, Washington, hop raisers will pick enough of their crop this year to fill existing contracts, at least. They are dubious about the future of the business, due to the approach of prohibition. The crop this year is as good as in 1917, when it totaled between 6000 and 7000 bales.

The Community Millers' Association of America has organized a novel greater wheat production drive, the members of the association vying with each other in securing pledge from wheat growers to produce more wheat in 1919 than any preceding year. The millers who secure the greatest increase of acreage by the campaign will have opportunity to win a portion of the $10,000 purse.

Preventing Forest Fires

By Arthur L. Dahl

THERE has been so much wanton destruction of the material things that contribute to the well-being of mankind during the war that we have almost lost our capacity to respond to the horror of it. We say it is the natural result of warfare and cannot be avoided. That is true of Europe where bitter warfare rages, but in this country we have a form of wanton destruction that goes on in the midst of peaceful pursuits. Every year millions of dollars worth of timber are destroyed and vast quantities of merchantable timber are devasted on our national forests through the carelessness of man.

It takes many years to grow a tree large enough to be of use, while it takes only a few hours to burn thousands of them, and thus add to the increasing shortage of lumber in this country. Fire is the great Hun enemy to the forest, and it is far more destructive than the ax of the lumberman, while no good comes from its visit, and the trees cut by the axeman are made to serve the purposes of civilization.

In creating an organization to fight the constant menace of fire, the government has utilized many of the modern methods of human warfare. There is an army of forest rangers which corresponds to the body of soldiers; there are vast systems of firebreaks, which are laid out as are the trenches on the battlefronts; the roads and trails constructed through the dense stands of timber, to make access to remote parts easy, are like the lines of communication maintained between the front and the supply depots; the telephone and the heliograph are used to connect the remotest ranger with headquarters, and finally, supplies of fire-fighting tools are stored in steel chests at different points in the forests ready for instant use if a fire occurs in that vicinity. Detail maps, showing the topography of the country, the location of all roads and trails, the places where rangers tools are stationed, and other valuable information are published by the government for use of the settlers and campers in national forests, and every possible effort is made to not only avoid the occurrence of fires but to subjugate them if they start.

A certain percentage of forest fires are caused by lightning, but the great majority are started by carelessness of man. An abandoned camp fire, a lighted match tossed into dry grass, a spark from the engine of a train, and dozens of other causes result in fires that sweep over thousands of acres, burning not only trees, but all forms of vegetable growth, the homes and fences of settlers, and everything else that is inflammable in the path of the flames. Where the fires are hot enough to produce chemical changes in the mineral substances of the top soil, that soil is rendered barren and unproductive, and all possibility of producing plant growth in the future is destroyed.

Time is a vital element in fighting fires. Just as a city fire department is organized to get to a conflagration as quickly as possible, so the forest rangers are trained to get to a fire as soon as possible. To enable them to do this, each ranger is assigned to a definite district, within which he lives and with which he becomes thoroughly familiar. Every road and trail, every stream and spring, and every dangerous spot is known to him; he circulates amongst the settlers, keeps in touch with campers and hunters, and in every way seeks to caution those he talks to against the careless use of fire, and in times of need he impresses into service the able-bodied men near the scene of the fire. Where men are not willing to volunteer their services, the rangers are authorized, under both federal and state laws, to compel men to assist. A definite appropriation is set aside by the government to compensate fire fighters.

Each ranger station is connected by telephone with the adjoining station and with the forest supervisor's office, and when a fire occurs, the first duty of the ranger is to notify the others. In high mountainous countries, various lookout stations are maintained on commanding peaks, and rangers detailed to occupy these stations constantly and watch for fires. Powerful field glasses are furnished, and various scientific instruments are at hand for determining the exact location of a fire seen through the glasses. When a fire is discovered by a lookout he immediately determines the angle as disclosed by his instruments, and then telephones to the next lookout station, where the ranger in charge uses his instruments to determine the angle of the fire from his point. By plotting these angles on a carefully prepared map kept for the purpose, it is possible to ascertain with remarkable accuracy the point where the fire is, and the rangers in that vicinity can be notified where to go without having to lose valuable time in searching it out. The heliograph is successfully used in California where bright sunny days are the rule in summer.

The ever present jitney is made use of to carry men and supplies to fires, and these machines are especially built to meet particular needs. On steep, narrow trails, horses or mules are used to carry tools, water and food for the fighters, and to avoid transporting tools for long distinces it has been the practice of the forest service to maintain at different points throughout the woods, steel or wooden tool chests in which are stored axes, shovels, mattocks and other fire-fighting tools. These chests are locked, but all rangers, and many nearby settlers are furnished with keys. The establishment of these tool chests has enabled the saving of a great deal of time in furnishing volunteers with tools, and each ranger always knows where he can find the tools he needs.

When the fire alarm is received by a ranger, he immediately notifies the forest supervisor, and then he starts for the fire, picking up as many men en route as he can. The forest supervisor then calls up the other rangers in that vicinity and instructs each just what to do. One man will be charged with securing sufficient food for the men, another will be sent to nearby towns to get additional men, and so on. If the fire is a big one, the supervisor goes in person and assumes charge of the fighting.

The Fire Patrol

This is a combination patrol and transport for tools and provisions and water, that is, so far as fire locations make possible for use of auto service.

Look-out Tower at Hopi Point, Arizona

This tower is near the Grand Canyon in Tusayan National Forest. The forest ranger is making his daily examination of forests lying within view of this watch tower.

Many national forests are located in those portions of the West which are dependent upon brush or chaparal-covered mountains for their water supply. This is particularly true of Southern California, where a large part of existing national forests contain no large bodies of timber, but are thickly grown over with chaparal. In the long, hot days of the dry season, when no rain falls, this brush cover becomes exceedingly dry and inflammable. When a fire starts on the steep side of a mountain, it is exceedingly difficult to extinguish, and it has been found very effective to construct systems of firebreaks at the base of the mountains or along the top ridges. These firebreaks are nothing more than cleared strips of land, from 50 to 100 feet wide, from which every vestige of vegetation is removed. By keeping this strip bare it is possible to stop a fire by compelling it to burn itself out for want of fuel when the cleared space is reached. It is also largely used as a base for "back-firing," which is one of the successful methods of fighting fires. This back-firing consists of starting another fire directly in the path of the big one, and by carefully controlling the back fire, compel it to burn the material ahead of the original blaze. When they meet, the surrounding ground is barren of unburned material, and the fire is conquered. Back-firing is dangerous, however, unless the men have a cleared base from which to work, as otherwise the new fire will get beyond control.

In constructing trails along the sides of steep mountains it is also a common custom to make such a trail act as a fire break. This is done by clearing the brush away along each side of the trail for a number of feet, thus stopping any fires which might start below it. Work on trails and firebreaks is usually done during the winter, or rainy season, when the men are not needed for patrol duty. To assist the government in this work, many water companies, supervisors and large land owners contribute sums of money for the employment of extra men to work under the direction of the forest rangers. In Southern California many hundreds of thousands of dollars have thus been spent in the construction of trails and firebreaks.

There are a number of methods used in fighting fires, the character of the topography and the local conditions governing the plan pursued. If running water is near, wet sacks are found effective in beating out ground fires, and in practically every case the efforts of the men are devoted to cutting away and removing the inflammable material in the vicinity of the fire. If a cleared place can be prepared, it is not difficult to beat out the flames with shovels.

The chief concern of the forest service, however, is to prevent fire. Every effort is made to educate the people frequenting the localities where fire danger exists, to the necessity of being careful. Hundreds of warning notices are printed on cloth posters and tacked to fences or trees along roads or trails, warning the people against throwing away lighted matches, or

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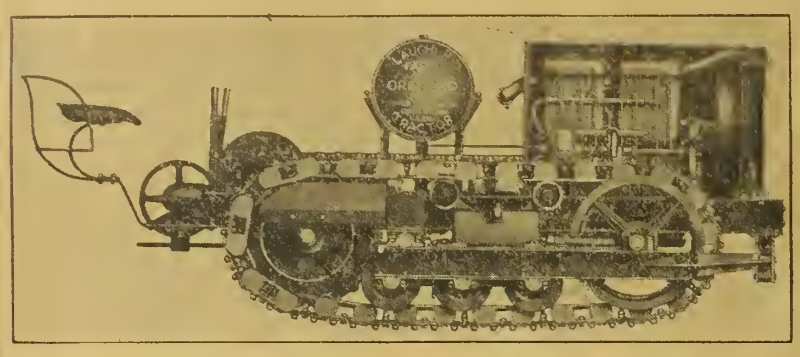
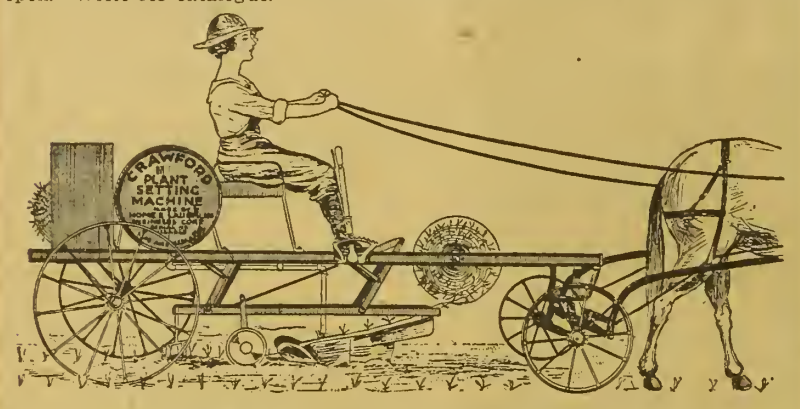
Get Territory on the
"Laughlin's Husky" Tractor



The "Little Husky" Tractor did all and more than was expected at the Tractor Demonstration Southern California now has its own creeping grip tractor made entire in Los Angeles factory. The car coupler type of crawler grip demonstrated its practicability in the rough, dry, hard ground and the pulling power of the engine was thoroughly demonstrated when it pulled two 12-inch P. & O. plows, doing thoroughly successful work. Sufficient sales have been made to take our output for 60 days. Purchasers should communicate with us at once to insure prompt delivery. Dealers are wanted. We have good territory still open. Write for catalogue.



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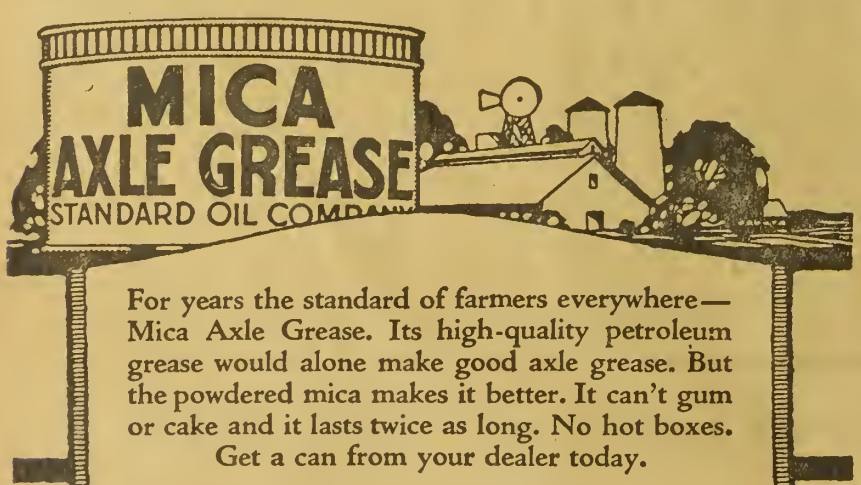

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STANDARD OIL COMPANY
(California)

Gum in Orange Groves

Written for California Cultivator By D. J. Whitney

THIS is not meant to be a scientific discussion of the subject of gum on orange trees, but merely some observations on certain causes of gum. And these will be given in connection with oranges on heavy soil, on which soil gum gives the most trouble.

The orange is a highly bred tree with certain freak habits. Lemons and grapefruit can be put in the same class. Of most importance in connection with gum seems to be the habit of the bark getting tight under certain conditions. Practically the same thing occurs with cherries which will gum if bad moisture conditions occur, causing dieback; cherry growers also split the bark on young, rapidly growing trees to keep the bark from getting tight.

In the orange tree the bark can tighten up and gum will be forced out (occasionally, not always) either by the soil pinching it badly, or because moisture becomes scant. A clay soil as it dries naturally will pinch the tree harder than a sandy soil, which is evidently one reason why gum is worse on heavy soil than on light. Also, poor culture will show its effects in gum quicker on heavy soil than on light. When a tree gets too dry the bark will tighten, then when it gets plenty of moisture the sap will rush through, as can be noticed by the numerous suckers frequently starting on a dry tree after an irrigation, and the surplus sap will issue as gum. As a matter of fact it is the combination of poor soil handling on heavy land and poor irrigation that seems to cause most of the trouble. A combination of good cultivation, with as little plow sole as possible, which will let the air and moisture get easily down into the soil and give the roots freedom to grow, along with proper irrigation does an immense amount in preventing gum.

It is commonly said that excess water causes gum. This is only partly so. On one orchard in this vicinity there is a good deal of gum trouble, but it will be found worse near the foot of the rows where the trees get a little less water than they should, if anything, than near the pipe line where on account of occasional leaks they get frequently more than is given in irrigation. If excess moisture were a leading cause the upper trees would have more gum than the rest of the orchard, where in fact they have less. In most places it will be found rather that the bark shrinks on the trees getting too dry, the clay soil on drying pinches the roots, the ground in cracking probably tears or breaks the bark on the roots, and both gum and mottle leaf are not far off. It is a combination of unsatisfactory cultivation and occasional drying.

Just why cutting out gummy bark will cure a case of gum disease, provided Bordeaux or other germ killing paint is applied to prevent its spread, it is hard to say, unless the cutting of the bark loosens the remainder of the bark and prevents it pinching, just as splitting the bark on a young cherry tree will probably prevent gum there. In any case the right method seems to be to cut away as little of the sound bark as is possible and to dress the wound with Bordeaux. However there is no intention here to discuss treatment.

There is once in a while a mistake made in thinking that gum from a sucker scar is gum disease. This is rarely the case. Clean, sound bark around the gum will show that the bark should not be interfered with.

No matter what the general cultivation and irrigation is like gum may be serious if heavy soil is permitted to cake around the trunk of the tree. A scraping out of the soil around the trunk and the filling in of a dozen shovelfuls of sand, once every two to four years, may be worth far more than a heavy fertilization if one or the other has to be dispensed with. A loosening of the soil at the trunk and a heavy dressing right there with gypsum to prevent the soil caking may be as good as sand or better where sand is scarce.

Aside from that a very important point in preventing gum—the starting point, on the basis that an ounce of prevention is worth a pound of cure—consists in a kind of cultivation that will let air and moisture get down easily, preventing also great surface evaporation and soil cracking, then irrigation which will let water get down deeply, frequently enough applied so that the trees will never suffer. This is a great thing in tree health in every way, and the most fundamental thing in causing vigorous growth, a good setting of fruit and getting that fruit to stay on and mature. Good cultivation and irrigation in every way is the starting point in citrus growing.

In this connection a few words about the puzzling problem of splits may be in order. The whole orange tree, roots, bark, leaves and shoots, is inclined to stop growing when moisture is scant; beginning a new growth when new moisture comes. Citrus fruits are more alive and growing on their own account than other fruits, that is, there seems to be in the fruit itself the substance, or energy, that causes growth. So when moisture is scant and growth stops, the fruits frequently act as if the skins decided to stop growing also; then when irrigation comes and the sap begins to flow in a hurry, the skin holds back its growth while the inside grows as it wants to and splitting starts. This is particularly noticeable, even in early summer, on those fruits which get a little dry and sunburned at the navel end. They are almost sure to split. even when fruits sunburned on the side will not split. This explanation of split oranges is only theory, but the prevention of it by uniform irrigation to prevent drying out of the soil is a good system under all conditions.

Condition of the Bean Crop

THE California bean crop has been materially shortened by the recent storm but the quality of the product has not been seriously impaired, according to a statement issued recently by G. A. Turner, president and manager of the California Bean Growers' Association, whose central headquarters are at Stockton. He says that after a more thorough canvass of the districts within the field of the association's activities, he is now in a position to report with a large degree of accuracy the actual damage and the condition of the bean crop at this date.

The association issued on August 15 a crop report to the effect that careful investigation showed that the bean outlook at that time was for a crop of from 80 per cent to 90 per cent of last year's production. The association now reports that as a result of the storms the 1918 crop will be at least 25 per cent less than was indicated in the August forecast.

Final reports from the Salinas district are particularly unfortunate and indicate a loss exceeding 40 per cent. The production of this district is almost entirely Small White beans.

Merced and Stanislaus Counties have escaped with slight damage; this is largely due to the fact that the crop was planted late and the nature of the soil is such that the rain was absorbed more rapidly than was the case in the more northern counties.

The reports from San Joaquin and Counties farther north in regard to Pinks are extremely discouraging; many fields have been killed outright. The loss of Pink beans is indicated as over 50 per cent and those that have survived have taken on a second growth which will materially delay harvesting and bring the crop into danger of frosts as well as into the period of rains.

Large Whites that were nearest maturity have suffered a curtailment in yield of approximately 25 per cent, although the quality of the crop is showing much less impairment than was feared. Samples of such Large

Whites as have been furnished since the storm are of surprisingly good quality, although showing some excess moisture. With favorable weather, this condition will not occasion any loss where care is taken not to pile the beans until they have had a chance to dry. Growers should be extremely careful in this respect. Anxiety to get beans under cover, growing out of the fear of another rainstorm, would result in beans being housed before thoroughly dry, and this practice is regarded by the association as being extremely hazardous.

Weather conditions for the last few days have been favorable, but the current reports of the weather bureau are disquieting. Even from Southern California telegraphic reports are coming in to the effect that an unexpected rainstorm has prevailed over a large area and it is obvious that if this continues the bean growers of the southern part of the state will suffer losses.

The indications are that prices of beans will be higher than they were last year but no figures are yet obtainable. It will be remembered that last year the government commandeered the White Beans on a basis of 11½ cents and it is not reasonable to imagine that this price was arbitrarily fixed. Reports from many careful growers develop the fact that up to date the increase in cost of production has been approximately 20 per cent over last year; if the government price was a fair price on the basis of their calculation for the 1917 crop, it is quite reasonable to expect that the price of the 1918 crop will advance in the same ratio as the cost of production has increased—especially in view of the decreased yield.

The bean grower has the world for his market and is not obliged to deliver his product to a small group of buyers who would have him at their mercy, and he will not be confronted with any necessity for selling his crop at a price so low that it would discourage him from again planting large acreages of beans.

"As we sense the bean situation," says Mr. Turner, "having in mind the principal territories of market production, we are firmly convinced that we need have no apprehension that the 1918 prices will be disastrous."

GAS MASKS—YOU CAN HELP

Every American has the chance for direct war service that will save the lives of soldiers. Carbon is needed to make millions of gas masks for the American army. Cocoanuts have furnished much of this material, but cocoanuts mean ships, and during the present shortage material for carbon must be found nearer home. The pits of apricots, peaches, prunes, olives, dates, cherries and plums and the shells of Brazil nuts, hickory nuts, walnuts and butternuts make carbon for masks that will outlast the most diabolical of the German gases.

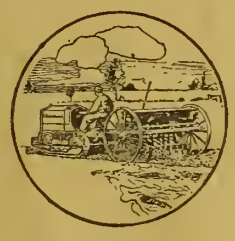
Here is work for all, every home, church and school. See that the work is started in your neighborhood. Place collection boxes in schools, churches, banks and stores, and above all in your own home so your boys and girls can see the pile grow. It takes 200 peach stones or seven pounds of nut shells to furnish carbon for a gas mask and save the life of an American soldier. How many masks can your neighborhood furnish?

Dry the pits and shells before turning them in to the nearest Red Cross chapter. This organization is in charge of collecting all material.

PRICE FOR WHEAT CROP OF 1919

By proclamation of September 2, 1918, the president defined his position regarding the guaranteed price for the 1919 wheat crop of the United States.

Briefly the 1918 prices at the primary points are to be continued as guaranteed prices for the 1919 wheat crop also, but in the spring of 1919 the president will appoint a disinterested commission to secure facts regarding farm labor, supplies and other cost factors in wheat production. From the report of the commission appointed, the president will determine whether there should be an increase over the present guarantee and if so what advance in order to maintain for the farmer a good return.



The Farm Labor Army *de*creases as the National Army *in*creases

In spite of the labor shortage *more* food must be produced—*more* acreage must be put under cultivation. *More* work must be done by *fewer* men.

There is just one solution,—machinery must fill the gaps in the ranks of farm labor.

Tractors must be used—thousands of them—tractors that will actually *do* the things you *want* a tractor to do—tractors that will work on practically *any* kind of ground—in *any* part of the country.

These are exacting demands but Cleveland tractors by the thousands are meeting them effectively.

They are producing food—in larger quantities than ever before—*and are consuming none of it.*

They are plowing 3½ miles an hour, eight to ten acres a day and under medium soil conditions are pulling two fourteen inch bottoms. This is equal to the work of three men and three good three-horse teams.

And the work is not only done faster but *better* with the Cleveland.

The Cleveland is an all-purpose tractor that does a wider range of work than is possible with other types. It is the tractor that works successfully on the side hill.

It plows, harrows, sows and reaps. It hauls, does grading and road work, cuts ensilage and does the hundred and one odd jobs which are always to be done about the farm.

It is tractor and stationary engine in one.

The Cleveland is built on the same principle as the giant battle "tanks." It crawls on its own tracks, laying them down and picking them up as it goes along. It will work practically anywhere—over rough ground, ditches and hummocks, close up to fence corners, and under small trees.

With 600 square inches of traction surface, it goes through sand, gravel, gumbo, mud and even wet clay. It travels over the newly plowed ground without packing the soil.

The Cleveland is only 96 inches long, 52 inches high and 50 inches wide. It can easily be operated by one man and can be housed in less space than is required for a single horse. It weighs less than 3200 pounds.

Yet in spite of its small size the Cleveland develops twelve horsepower at the drawbar and twenty at the pulley.

The Cleveland Tractor was designed by Rollin H. White, the well-known automotive engineer, and is built under his personal supervision. Only the best materials are used throughout. Tracks and gears are protected from dirt and dust, and the track sections are joined by hardened steel pins which have their bearings in hardened steel bushings.

Every farmer can fill up the gaps in the ranks of his farm labor *profitably*—can help the nation meet the food crisis *profitably*—by installing one or more Cleveland Tractors *now*.

Speed up *your* production. Make more money. Write us for complete information and the name of the nearest Cleveland dealer.

The Cleveland Tractor Co.

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The largest producer of crawler-type tractors in the world

Cleveland Tractor

See Above Adv. of The

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Distributor for Northern California and Western Nevada

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See What The United States is Doing in This Great War

California Liberty Fair

October 12 to 26, 1918

This Month in the Vegetable Garden

Northern California

Written for California Cultivator By A. R. Gould

THE early rains of last month were more than welcomed by the war gardener although they might not have been expected. Naturally some there were who professed to be ruined but everybody can't win and we venture to say that there are now a whole lot more busy in their gardens than there were before. The rains have proved a tonic, and if our observations are correct we shall get enough this coming season to save the day. Now is the time to make plans for the coming season's work. Uncle Sam has no use for slackers.

Soil Preparation and Manures

A general survey will be necessary, and we would advise those who have kept records of plantings to refer to these before arranging for next season's crops. Thorough cultivation is in every case of first importance. The effect of plowing and cultivation of the soil is to loosen the particles and mix them also to allow the air to enter and promote oxidation. It will make the soil more porous and more permeable to roots and allow the vegetable and mineral matter to decompose more rapidly and supply plant food. It is useless to expect large crops from worn-out soils, and is a mistake to think that you can keep on cropping land without wearing it out. After heavy cropping the land should be deeply trenched and manured and those soils which are sour should be treated with lime which is really a plant food in itself. Lime is an important constituent of all plants and is present in abundance in some soils but is deficient in others. In some, such as stiff heavy clay soils, lime has a very beneficial effect. Lime in its unslacked state is applied to vegetable soils containing deleterious vegetable acids and by its action it neutralizes the acids and forms useful compounds in the soil. Broken shells which are readily obtainable in our coast districts contain much lime. When applying lime it should be worked in near the surface and not trenched deeply as would be the case with other manures. Bonemeal, or crushed bones, has often been mentioned in these notes as a manure and it contains a considerable amount of phosphate of lime which has been taken by animals from the soil in their food Potash is another invaluable manure and is usually present in large quantities in the soil and after heavy cropping it is essential that this element should be put back. It is contained in large quantities in plants, and when decayed weeds or leaves are buried in the soil or if the ash of burnt plants is returned to the soil this valuable manure is supplied for a future plant food. Farmyard manure is really the most valuable that can be applied to the land as no other manure will have quite such a lasting effect. This includes the solid and fluid excrements of all animals kept on the farm. That from the poultry is much richer in nitrogen than that from the horse, cow, pig or sheep. The percentage ranges from 1.00 per cent to 1.75 per cent. It is also richer in ammonia and potash. Extreme care should be exercised in using this as if used too strong it will soon brown the plants.

Dehydration of Vegetables

This process of preserving vegetables has come to stay and we are greatly indebted to Mr. E. Clemens Horst for developing this method in our state, and it appears that the demand is now very great for this product and those who have grown more than they can store or consume may dispose of their vegetables to the dehydrating plant if it is within easy reach.

Carrots

It will be necessary to thin out the variety of Early Short Horn sown last month. Thin to at least four inches apart and later in the month keep the hoe busy between the rows. At the end of the month sow Danvers Halflong.

Beets

This crop, sown as advised last month, will also require thinning to six or eight inches apart.

Beans

The broad beans sown last month should now be in active growth and should be well cultivated between the rows. You may still make a sowing of these.

Cabbage

These winter cabbage which we advised sowing last month will about the middle of this month need transplanting to a fairly rich plot. Allow about 12 to 18 inches between the plants.

Lettuce

Transplant the variety Big Boston, sown last month to a well manured plot. These may be planted between young strawberry plants and advantage taken of the space, where these new plots are being established.

Tomatoes

The effect of the rains on this crop was to cause splitting of many of the matured fruits but should we be favored with mild weather there will still be fruits in abundance and a prolonged season.

Peas

The plots should be well prepared for this important crop and a sowing may be made of the early varieties such as Little Marvel and Alaska, the best dwarf types. Sow these about the end of the month in rows two to three feet apart sowing the seed very thinly and if the ground is not too moist soak the seeds in water for an hour or so before sowing.

Onions

Special care should be used in the preparation of this plot and it will be necessary to apply plenty of manure and have the ground well pulverized and the surface very firm and finely prepared. The early varieties Extra Early Pearl, Red and White Bermuda may be sown this month. Sow the seed very thinly in rows 18 to 20 inches apart.

Radish

Make a sowing of winter radish Chinese Rose Winter and Long Black Spanish. They will need a deep rich soil, and frequent cultivating between the rows.

Parsley

Another late sowing of this may be made. Sow moss curled or double curled.

Southern California

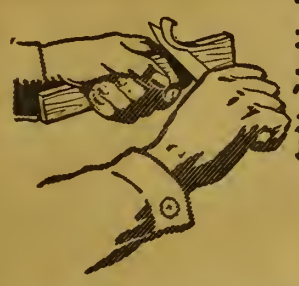
Written for California Cultivator By D. F. Reichard

OCTOBER is the ideal month for starting garden operations. Clean up the land. If it is a new place clear off the weeds and brush and burn them. If it is ground that has been cultivated or been in garden, clear up all matured crops, burning all the old vines and bushes that cannot be used as fodder. This reduces the liability of plant insects and diseases for the following year. After the land is cleaned up cover it with a heavy dressing of barn yard manure to be turned under after our first good soaking rain. If the rains do not come as early as are desired, thoroughly soak the plot by flooding or sprinkling. All this is preparation for early spring planting. It takes a couple of months for the straw and roughage of the manures to decay and become incorporated in the soil.

In growing gardens those planted during the last two months must be alternately irrigated and cultivated to keep the plants in continuous growth. Watch the plants closely for insects or disease. At the first sign of aphis spray thoroughly with Black

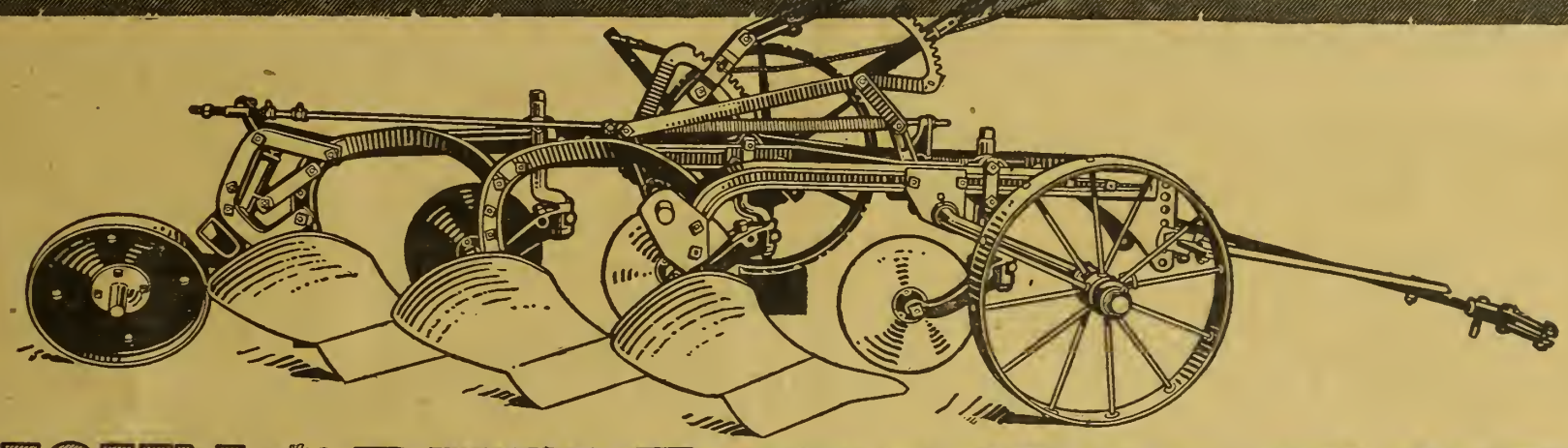
Leaf 40. With the appearance of eating insects, cabbage worms and the like apply an arsenic poison of some nature. For fungus troubles use Bordeau mixture.

At this time when the natural moisture is so completely out of the ground it is advisable to wet as large plots as possible at a time—the water does not evaporate so fast as when only small plots are wet. Cultivate as soon as the land will work without sticking



No Knife Is Better Than Its *Blade*

No Tractor Plowing Outfit Is Better Than Its *Plow*



JOHN DEERE TRACTOR PLOWS

Give Special Satisfaction To California Farmers

It takes special tractor plow construction to meet the requirements of plowing in California.

John Deere Tractor Plows, No. 5 and No. 6, have that construction.

The development of their special advantages was directed by men who had made a close study of California tractor plowing conditions.

They have fully proved their special ability in the hands of California farmers and fruit growers during the past year.

These John Deere Tractor Plows are controlled by the wheels at all times because the axles are rigidly fastened to the beams. The land wheel is set back balancing the weight of the plow over all of the wheels and insuring even depth of plowing in uneven ground. The plows get down to position quickly and ***stay in the ground*** while plowing.

The land wheel and front furrow wheel are set so as to permit plowing close up to trees or vines in throwing either to or from the row.

Both levers are out of the way of limbs while the plow is at work.

The power lift for these plows is the simplest and most dependable ever designed. No chains or sprockets to cause trouble. A powerful clutch engages positively and raises the bottoms high and level.

There is unusual clearance between mold board and beams for deep or trashy-land plowing.

These plows are exceptionally strong in every part. Beams are warranted not to bend or break. Beam braces have an extra long lap. Large bolts and lock washers hold all parts rigidly to place.

Besides the special design end extra strength that particularly adapts them for use in California, these plows carry the genuine John Deere bottoms, favored everywhere because of their wearing, scouring and pulverizing qualities.

Their John Deere Quick Detachable Shares save time and labor without sacrificing strength or close fit. Loosen one nut to take the share off. Tighten the same nut and the share is on tight.

The hitch on the No. 5 and No. 6 is adjustable—it adapts the plows for use with any standard tractor.

You can get the size to suit your tractor. The No. 5 plow is furnished in two and three-bottom sizes; the No. 6 in three and four-bottom sizes. Ten, 12 or 14 inch cut.

Ask your John Deere dealer to show you a John Deere No. 5 or No. 6 Tractor Plow. Investigate the special advantages these plows have to meet your needs. You will find them fully dependable for better and longer service in California fields, orchards or vineyards.

Get These Books

Write today for our free booklet describing fully the John Deere Light Tractor Plows. It has a message on tractor plow value that you will find profitable to you. Ask also for our big free book *"Better Farm Implements and How to Use Them."* Its 156 pages describe a full line of labor saving implements—(tells how to adjust and operate many of them). It is full of practical information that will help you. Put it in your library. Use it as a reference book. It will be worth dollars to you.

To get these books, mention the implements in which you are interested and ask for Package PT 12.

John Deere Plow Company
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ORIGINAL KEROSENE TRACTOR

This tractor is a record breaker in fuel economy. It is the first tractor built in which cheap fuel was a part of the original design and construction. Our patented inbuilt manifold transforms kerosene into a powerful gas and insures its burning all the fuel—no waste.

"I threshed 18,000 bushels grain this summer with the Waterloo Boy Tractor. It required 15 gallons kerosene and about a quart of cylinder oil for a ten hour day." E. C. Haraldson, Hanley, Sask.

As Efficient in the Field as at the Belt

The Waterloo Boy has a record of pulling any load eight horses can pull. Its simple, powerful motor sends driving force into both the large, wide rear wheels which grip the ground firmly, pulling three 14 inch bottoms 7 inches to 8 inches deep, without packing the soil.

Working parts easily accessible, dust proof gears, automatic lubrication, reliable ignition, Hyatt Roller Bearings.

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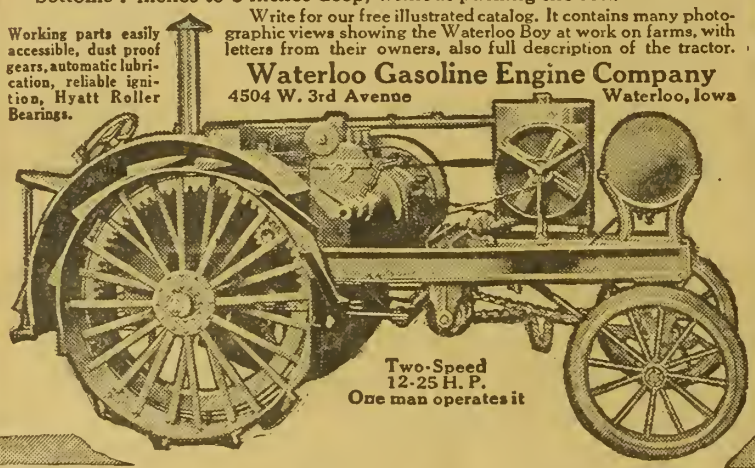

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to one's tools. Always leave the surface with a fine mulch to reduce evaporation.

Beets, carrots, turnips, salsify and parsnips planted this month will be ready to harvest early next spring. Spinach, radishes and mustard will be ready for use in from two to three months planted at this time. Lettuce requires about four months to head well during the cooler months. Sow seed of cauliflower and cabbage now for mature heads during April and may. Setting the plants at this time will bring the crop in during February and March.

Sow the seed of early onions (flat varieties) transplanting in beds when they are one-eighth to one-quarter inch in diameter. It is too early to plant seed of the Globe varieties. For quick results plant onion sets. They will make green table onions in a couple of months or will make ripe large onions several weeks earlier than the seed.

Early varieties of peas, such as American Wonder, Laxtonian and Little Marvel, are most satisfactory planted at this time and will produce green pods in about three months. The table varieties are much longer coming in during the cool months.

The planting of any squashes, melons or corn is not advisable from this time till spring. On a warm frostless slope Canadian Wonder and Ventura Wonder beans may be planted with safety. In other locations do not take the risk. Other varieties of beans are not at all advisable on account of the susceptibility to cold and disease.

This Month in the Ornamental Garden

Southern California

Written for California Cultivator

PLANT narcissus, iris and all other spring flowering bulbs at once. Gladiolus, however, may be held till December or even later if desired. All iris which have grown themselves out of the ground should be broken up and replanted. Amaryllis belladonna are finishing their bloom and may now be divided and reset. The wonderful beauty of the bloom of these bulbs calls for more general planting.

Dahlias have shown a wonderful bloom this year. In colder sections they will become dormant later in the month and may then be taken up and stored for the winter. One should be sure to have correct labels on all plants before all bloom ceases. In warmer sections where bloom may continue for several months irrigation with liquid manure will result in wonderful increase of fall bloom.

Chrysanthemums are beginning to show bloom. This is the time to apply quick acting manures.

Pinks and carnations layered in July are now well rooted and may be reset.

One may plant this month most of the evergreen shrubs and conifers. Prune severely roses, especially those which are dormant from drouth. After pruning heavy application of fertilizer and water will give holiday season bloom.

The lawn is reasonably sure to look a bit ragged, especially where it has not been watered and fertilized during the later season. Rake out the devil grass, apply fertilizer and secure a growth of Blue grass before possible frost may have browned the Bermuda.

Northern California

Written for California Cultivator By A. R. Gould

DURING this month we shall find much to do in the ornamental garden, and the rains will also have prepared much of the ground for digging and planting. From now on many shrubs and trees may be required for extended planting and many evergreen shrubs may be secured from the nursery and planted toward the end of the present month. The ground should be well prepared for these and good sized holes dug and well manured as it is useless to expect any tree or shrub to grow unless given a good start, and the more care you use the better results you will have. It will be advisable to wait until the leaves are off before transplanting any deciduous trees or shrubs. Any tree newly planted should be well watered and the soil pressed very firmly around the roots. Lawns may need renovating and probably resowing and any which are not too weedy may be put into shape by the removal of the weeds and a sprinkling of white clover and Kentucky blue grass. A few weeks after the new grass has germinated a dressing of bonemeal and dried blood should be given. If an entirely new lawn is to be laid it will be necessary to spade the present one under, trenching it very deeply so that the weeds will not be again so troublesome. Never leave any roots of the dandelion near the surface as each small piece will grow. After the ground has been well prepared mix in the surface a dressing of bonemeal and dried blood, water it down and leave it for a few weeks, and if a few weeds should appear they may soon be removed before the grass is sown. You will require one pound of seed to 200 square feet of lawn. Rake the seed well in and distribute evenly over the area.

Annuals

Many of these will now be past their best and the cleaning up process will begin. Any subjects which are showing matured seed should be put on one side for the seed to be collected. Some subjects such as ageratum, calliopsis and petunias will no doubt have reseeded themselves in the beds where they have been growing, and if these small seedlings are put in boxes of soil and given protection during the winter, they will supply early bloom for next season. Violas and pansies being much hardier may be transplanted to well prepared beds until such time as they are needed for planting out to their respective quarters. Care and attention to such details as these will save time and trouble in resowing, and the climatic conditions in this state are most favorable to regeneration. Quite a number of subjects outside of the annual class regenerate themselves, as careful observation will show.

Bulbs

Those who contemplate planting choice varieties of tulips, hyacinths, etc., which are mainly imported, should put in their orders at once to their seedsmen, as this year, owing to the fact that imports from Holland have been restricted, there will be a shortage. Of course our own state can produce even these, but this industry is only just developing, as it were, and the supply is also rather limited. However in the case of narcissus and daffodils, these have been grown here for some few years in quantity, and they are equal to any imported. All of the above mentioned, and snowdrops, crocus and scilla, the bluebell, should be planted this month. See that the ground is manured and well cultivated. Those bulbs which were naturalized should not be disturbed. After the rains have become more frequent they will start into active growth and will give an early display. If a few choice flowers are required in the house, bulbs may be planted in pots. Three or four bulbs should be placed in a five inch pot of fairly rich soil. These must be plunged in sand or ashes for a few weeks to encourage root action. French ranunculus grow from the rhizomes or creeping roots, and they have a very wide range of colors. If you have never tried these you should this season plant a few. They should be planted two inches deep and four inches apart in fairly rich soil. Anemones are also useful for early flowers, and the same cultural methods will apply to these.

Perennials

These plants will have finished flowering. Most subjects and all the dead flower stalks should be cut off and either burnt or deeply buried. Many subjects, such as the Shasta daisy,, Michaelmas daisy, anchusa, phlox, campanula and gaillardia, will need dividing and replanting, and it is generally a good plan to rearrange the whole border, allowing plenty of room when replanting for future expansion. Erigeron speciosa is a perennial of great value as it produces its lavender flowers for many months during the summer and fall. The Heleniums are also a great acquisition to any garden.

Chrysanthemums

Those varieties producing late flowers will need frequent application of liquid manure. Soot water is also helpful. Keep on the watch for aphis or green fly and spray with nicotine, Black leaf 40.

SOUTHERN CALIFORNIA FAIR AT RIVERSIDE

A patriotic program of intense interest has been prepared for each day of the Southern California Fair at Riverside, October 8-12.

The complete program follows for the week's festivities at "the Exposition of the Southwest:"

Tuesday Aviation and Children's Day, all school children of Southern California admitted free. Opening of the grounds at 8 a. m. with all exhibits completed and everything in running order. At one o'clock a bevy of Homer pigeons will be liberated in front of the grandstand bearing a message from the management of the fair to President Wilson. This will officially open the fair. Races. Evening, vaudeville.

Wednesday, Army, Los Angeles and Riverside County Day. Morning—Inspection of the government war exhibits and agricultural displays. Arrival of excursion trains from Los Angeles with the naval reserve band. Afternoon—Race program. Music by the naval reserve band. Evening, presentation before the grandstand of a miniature army trench scene by the Y. M. C. A. men of March Field assisted by soldiers.

Thursday, Red Cross Indian Day, Livestock Day—Students of Sherman Institute will present a patriotic program. Livestock parade following meeting of the Citrus Belt Goat Association in goat department. Aeroplane maneuvers by soldiers of March field. Special features by the Red Cross workers in the patriotic tent. Evening—Red Cross and vaudeville features.

Friday, October 1/ Navy, Orange County, Palo Verde, Coachella Valley Day. United States navy band of San Pedro in patriotic concerts. Race program, vaudeville and aviation. Demonstration of the proper handling of bees by an expert working in a wire cage in front of the grandstand.

Liberty and San Bernardino County Day, grand celebration by all for victory in the war for Liberty. Race program. Football game, Whittier state school vs. Riverside Polytechnic high school; 14 mile relay between two teams of March field soldiers running from March field to finish in front of the grandstand at the fair grounds; vaudeville, aviation.

PERUVIAN INCREASES YIELD

A prominent grower of alfalfa reports that results obtained by alfalfa growers in several parts of the Southwest show an average of two and one-half more tons of alfalfa hay per acre per season where the seed known as the hairy Peruvian is used, than has been secured from the common types of alfalfa. Hairy Peruvian has been proved the hardiest type ever introduced in the West and it certainly has the longest producing season. The plant has a greater abundance of leaves than any other variety, a condition which creates a high feeding value.

After each cutting the plant recovers quickly, giving additional cuttings per season over other varieties. Few growers stop to think that seed is the least item of expense in the production of alfalfa. The farmer must always bear in mind that he is putting in a permanent crop which will continue to produce for years without reseeding. Therefore, to get the greatest returns on the money invested, the rancher should sow the variety of seed that will give him the greatest production.

RIGHT 'O

The Policeman—"Where are you going at this time of night?"

The Wanderer—"I'm—hic—goin' to a lecture."

With
Concrete
You build once Only —Think of That!

¶Fireproof, rotproof, ratproof, cycloneproof—no painting, no expensive upkeep, no insurance on the building—permanent.

¶*We must stop waste*—waste of money, waste of labor, waste of transportation. *We can do it with concrete.* The bulk of materials required can usually be obtained on the farm or near by. Home labor can do the work.

¶Granaries, silos fruit and vegetable storage cellars, corncribs, milk, hog and poultry houses, hotbeds, cisterns, feeding and watering troughs or tanks, barns, all kinds of floors and pavements—any necesssary building or improvement you can think of—is most economically made with concrete, for *with concrete you build once only.*

Cold weather need not stop you.

Write for Bulletin 115, which will tell you what you can do with concrete in your spare hours this fall and winter.

PORTLAND CEMENT ASSOCIATION

Offices at

Atlanta, Chicago, Dallas, Denver, Detroit, Indianapolis, Kansas City, Milwaukee, Minneapolis, New York, Parkersburg, Pittsburgh, Salt Lake City, San Francisco, Seattle, Washington

CONCRETE FOR PERMANENCE

W.S.S. WAR SAVINGS STAMPS ISSUED BY THE UNITED STATES GOVERNMENT

Full Power on Turns
Because of the Single Track

Will the tractor you buy turn in a 10-foot circle (5-foot radius) pulling as strong on the short turns as on the straight away—and will it do that without slipping one side or one wheel? That's of vital importance! Many tractors work well when pulling straight—it's on the turns that you get poor service from your tractor.

The Bean TrackPULL Tractor is the only small orchard-and-vineyard tractor made that delivers full power on short turns and it turns without slipping one side, pivoting, or doing anything else that a tractor shouldn't do.

Many tractors will turn themselves around all right, but the tractor you need whether in orchard, vineyard or field work, must take the tools around too and keep them at work all the way around. This requires full power on the turns.

This remarkable machine is built on patented FRONT-DRIVE principle—you steer with the single track which does all the pulling whichever way you go. You can turn within the same row (see illustration above) without lifting out the tools, making as short a turn as with a team!

Absolutely no other tractor acts so like a team while doing three times as much, is so handy, so efficient, so staunch, and so protected against overstrains!

You'll want the Bean TrackPULL eventually. Send coupon at once for catalog, complete description, and name of nearest demonstrating agent.

Don't buy a tractor that does less. Don't do without one that does so much.

Bean TrackPULL Tractor

New Features in 1919 Model

1. Motor—Improved oiling system; improved carburetor control, governor equipped.
2. Track Rollers—Provided with hardened steel thrust washers.
3. Drive Sprocket—Solid steel ring, machine cut, hardened and heat treated assures long service.
4. Bearings—Provided with improved dust-protected greasing facilities.
5. Rear Wheels—Provided with dust cap, wear-resisting bushings and improved greasing facilities.

Price advanced to $1445 Nov. 1st. By taking October delivery you will get the latest model with all 1919 improvements at the present price of $1340.

Bean Spray Pump Co., 234 W. Julian St., San Jose, Calif., (or Dept. D-10), 131 N. L. A. St., Los Angeles, Cal. Send me catalog and full information without obligation on my part.

Name .....
Street .....
City .....
County ..... State .....
No. of acres .....
Kind of crops grown .....

We Manufacture Levelers for Any Power From 6 Horses to a 75 H. P. Tractor

A Schmeiser Leveler
of the "Giant" Type
WILL WORK WONDERS ON YOUR FARM

Moving immense amounts of dirt daily, and working on ground too tough for horses and Fresnos to tackle, SCHMEISER POWER LAND LEVELERS are now being used with utmost success by a great many ranchers, large and small—also by contractors—saving their owners time, labor and money.

WE SEND THEM ON THREE DAYS' TRIAL

So extremely simple, a child could operate one, as a simple twist of the wrist raises and lowers the bucket or holds it stationary, as the case may require.

YOU SHOULD send for our LATEST catalog J-600 which is full of interesting information on LABOR SAVING DEVICES and machines for moving the earth.

Schmeiser Manufacturing Company
22 Mechanic St. Davis, Cal.

Manufacturers of

Sure Pop Almond Hullers and Separators, 3 sizes; McGarvin Fruit and Olive Graders, any size; Schandoney & Harrington Equalizing Hitches, any size; Diamond Special Harrows, Baker Clips, Clevises, and Schmeiser Portable Automatic Hay Derrick. We sell the Martin Ditcher and Grader.

N. W. Thompson Imported and American Bred

Percheron, Belgian and Shire Stallions

My new shipment of Stallions has arrived consisting of Percherons, Belgians, and Shires personally selected by me from the best breeding sections of Iowa, Illinois and Indiana.

Two, three and four years old that weigh a ton and better. The heavy boned, clean legged kind with lots of style and action.

The largest collection of high class Stallions west of the Rocky Mountains.

Prize winners at this year's big Eastern shows. Life Insurance and State Certificate of Soundness furnished with every horse. If in need of a really high class Stallion come and inspect my horses or write for full particulars. I can suit you in price, quality, and terms.

N. W. Thompson

Patterson, Stanislaus Co., Cal.

Ranch Adjoins Town

Sixth Semi-Annual

SALE

Kings County Poland China Breeders Association

Wednesday, Oct. 9, 1918

at Kings County Fair Grounds, Hanford, California

80 HEAD 80

Registered Poland-China Bred Sows and Gilts to be sold without reservation from the best herds in Kings County.

Consignors:

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For information or Catalog write to F. D. Ross, Sec., Hanford, Cal.

THIS IS THE TEST

COPRO is Soluble, therefore digestable. It is nourishing and flesh building.
Contains 16.4% Protein.

Write for FREE SAMPLE and copy of our booklet "SUCCESSFUL FEEDING," which contains extracts from Farmers Bulletin issued by the UNITED STATES DEPARTMENT OF AGRICULTURE and other helpful information on feeding

FEED IT TO YOUR Cattle, Hogs and Poultry.

If your DEALER can't quote prices write us direct.

Copro

PACIFIC OIL & LEAD WORKS
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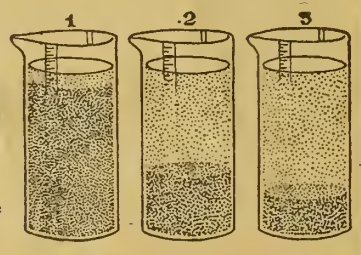
155 Townsend St., Dept. San Francisco, Cal.



Note the Amount of Water Absorbed by COPRO (Jar No. 1)

Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 426982, grand champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Building San Francisco

CARRUTHERS FARMS Mayfield, Cal.

Northern California Livestock Notes

Written for California Cultivator By W. S. Guilford

LESSONS FROM THE ORLAND FAIR

"WE COULD have exhibited better fruit than that—next year some of these blue ribbons will be won by our farms!"—and "I know we have a better pig than that blue ribbon winner. Why didn't we bring him?"—and more exclamations like these were heard at the recent Glenn County fair at Orland. And where there were two or three or four entries in many classes this year, next year there will undoubtedly be 15 or more entries in all of the principal fruit, grain and vegetable classes and in many of the live stock classes.

I know one exhibitor of hogs who showed animals in but two classes this year who has already made plans for fitting a full herd next season.

While this is an old farming section, in one way it is new as regards many kinds of intensive development, and nothing has done so much to bring about a realization of the crop producing possibilities of the section as this Glenn County fair.

Until products are brought together for comparison and display people do not appreciate how good they are, and until folks see the crops or exhibits that others have grown they do not realize how good are the things they have produced.

Until a fair is studied and the effect of the exhibits on exhibitors and visitors noted, one does not realize how important a factor a fair is, both in increasing quantity and quality of production.

THE RAIN

The rain of the second week of September and the close, muggy weather which followed was good for the maturing rice crop; it started feed everywhere and it made plowing possible. But it caused serious damage to dried fruit—on the dry yards and in the orchards and almost ruined the Smyrna fig crop in many orchards.

The soil was warm, and bur clover, barley, wild oats, weeds of all kinds and other sorts of winter growing crops came up almost over night. There has been enough rain to wet down into the ground sufficiently to insure an abundance of fall pasturage. Rice men would appreciate hot dry weather now, however, and it would be a big help in getting the balance of the prunes dried. The peaches were practically all off the dry yards before the rains.

The prunes on the orchards that were short of moisture and badly infested with red spider were pretty well off the trees, some on the trays but many on the ground. Some damage was done to these, especially those just put on the trays and not much dried. These moulded and made hog feed. Where trees had been irrigated and spider controlled a large percentage of the prunes were on the trees. Good drying weather is needed for saving these.

The Smyrna figs are a sorry sight. They have split and soured. The "vinegar fly" lays eggs in them and the maggots which hatch finish the work of destruction.

Some alfalfa has been sown. Conditions seem ideal for the fall planting of this crop. The warm, moist seedbed should give the plants a fine start before frosts come.

ANTHRAX

There is now prevailing one of the most serious outbreaks of anthrax that has ever occurred in the Sacramento Valley. Veterinarions have been busy night and day—and thousands of animals have been treated.

Anthrax, or charbon, sometimes called splenic fever, malignant pustule, and wool sorter's disease, is an infectious disease to which all warm blooded animals are susceptible. It is one of the oldest diseases known and occurs all over the world. Cattle, horses, mules, hogs, sheep and man are attacked most frequently. It is caused by a small parasitic plant, the anthrax bacillus, which grows in the blood. It usually enters the body in food or water, infected pastures that have been closely grazed being common sources. The bacillus remains dormant in the spore form in the soil for long periods, and animals are most apt to become infected when the grass is short and considerable dirt is taken into the system. It is possible for an animal to become infected through wounds or cuts as well as through the alimentary canal. This season it has also been spread by the big blood sucking horse flies which have been unusually numerous.

The anthrax bacilli multiply in the blood of an animal very rapidly and soon cause death. Frequently an animal apparently healthy at night will be found dead in the morning, apparently having just "keeled over." Frothy blood discharges from the nose and rectum are generally seen and the carcass bloats rapidly. In other cases there is swelling in the throat or groin and the animal is off feed and ailing for three or four days. High fever is present. Animals do not eat but drink much.

When a carcass is opened the blood is found to be brownish black in color and does not clot. The spleen has the consistency of blackberry jam. If an animal is suspected of having died of anthrax the postmortem examination should be made by a veterinarian. Carcasses of anthrax animals should be burned., This is most easily done by digging a trench along side the carcass, placing three or four iron bars or rails across it, rolling the carcass over on to these and above the pit, drenching the carcass with oil and building a big fire under it. It is a very difficult matter to burn an animal by building a fire over the carcass. One should be careful to destroy the frothy bloody excretions by shovelling them on to the fire with plenty of dirt or soaking with strong carbolic or other disinfectant.

The disease is most prevalent in summer and fall and in wet marshy pastures. With the coming of the rains it usually subsides. Treatment for the disease consists in giving the affected animals an injection under the skin of large doses of serum, a product prepared from the blood of horses that have been made hyperimmune against the disease.

When an outbreak occurs in a herd the animals apparently healthy are immunized against the disease by giving virus or spore vaccine, which consists of weakened but living spores of the disease along with the serum. The disease and the cure are put into the system at the same time, rendering the animal immune. This immunity is claimed to last only through the season.

Advice as to vaccinating or not vaccinating, based on the experience of this season, is varied. Some who have vaccinated before any visible outbreak occurred in the herd have lost animals and believe that if they had it to do over again they would wait until loss occurred before treating the balance of the herd. Others have waited until one or more animals have died, then vaccinated and prevented further loss. Others have waited until losses occurred, vaccinated and continued to lose some animals.

Many things can occur in treating animals on the average farm, where conveniences for handling and holding animals are poor, that make it difficult to get the best results. Animals are overheated by running around yards and corrals and frequently injured.

The concensus of opinion is that the only thing to do is to vaccinate animals in infected herds and in infected territory.

FRACTIONAL-POUND BUTTER SALES

The rule prohibiting manufacture or sale of butter in smaller units than pound prints has been amended to go into effect on January 1, 1919, instead of September 15, 1918. The extension of time will prevent the waste of supplies of printed paper and cartons already on hand. The rule is aimed chiefly at saving time and materials and when it goes into effect January 1, sale of quarter and half pound prints will be stopped. Retailers may, however, cut pound prints and sell any fraction demanded by the purchaser.

LIVE STOCK ON SUGAR-BEET FARMS

The stock utilize by-products of sugar-beet growing, the tops and pulp, and increase the growers' profits, and the nation needs more meat as well as sugar. Live stock on the sugar-beet farm constitutes an important factor in success of beet growing from two standpoints: The utilization of beet tops and pulp to the best advantage, and the production of stable or barnyard manure which can be used to enrich the soil.

Sugar-beet tops and pulp are good feed for many kinds of live stock, including chickens, hogs, sheep, cattle, and, to some extent, horses. Generally the tops and pulp are fed to sheep and cattle. They may be pastured off. The tops are left scattered over the ground and this method of feeding result in the ground being more or less trampled. Sheep especially are inclined to travel more generally in paths, thereby trampling the ground unevenly. In no case should the pasturing of the tops be permitted when the ground is wet, since the ground itself would be seriously injured by trampling in that condition and many of the tops would be wasted. While live stock thrives on beet tops and pulp, other feed must be used in finishing the animals for the market. Beet tops, especially the crowns, contain considerable mineral matter which is beneficial to live stock, but it should not be fed in too large quantities.

Aside from pasturing the tops they are sometimes allowed to cure partly and are then gathered into piles, hauled to the feed yard and fed in racks. This is a much more economical method than pasturing, but it involves the additional expense of gathering and hauling. The tops may also be used as ensilage. When chopped with straw, cornstalks, or other roughage excellent silage is produced. Both the tops and the pulp are excellent for dairy cows, since they act as a tonic upon the animals as well as a food and increase the flow of milk. Pulp is used either fresh or dried. It is dried artificially, either by itself or in combination with molasses. The object in drying the pulp is to make it easier to handle. About 80 per cent of the weight is lost in drying. The dried pulp should be soaked for several hours before it is fed to stock.

Animals can not be finished for the market on the beet by-products alone, and unless other feed is available it will not be advisable to purchase animals for feeding purposes with a view to turning them on the market later. If the farmer is provided with dairy cows, it is advisable to furnish them with one or two feeds of tops or pulp each day. The tops, when cured or pitted, will keep for several months; the pulp, when left in a large pile, will not spoil for feeding purposes, except in a thin layer on the surface. If the tops or the pulp are fed heavily to dairy cows, a distinct increase in the flow of milk marks the top and pulp feeding period, and there will generally be a distinct falling off in the flow of milk when ths feed is discontinued. If the supply of tops and pulp is limited, it is better to continue the feeding over a longer period, giving a smaller amount to each of the animals daily.

CATTLE SAVED FROM BLACKLEG

Dr. R. H. Williams, animal husbandman, of the University of Arizona, in an interview gives the following statement concerning the prevalence and control of blackleg in Arizona:

"Blackleg is widely spread over Arizona, and causes the loss of thousands of cattle annually. These losses may be absolutely prevented by vaccinating all cattle under two years of age. The vaccine should prove satisfactory if applied every six months until the animals are 18 months old.

"Range cattle are usually wild and handled with difficulty, so that it is considered more feasible to use a single treatment for vaccinating them.

"There are several companies preparing a special germ-free vaccine which renders the animals permanently immune. Treatment with this kind of vaccine costs from 35c to 50c a dose, but calves may be treated when they are as young as three months, and this renders them permanently immune the rest of their lives. Another advantage of this serum is that it gives the animals immediate protection from the time of application, and some claim that the serum may have curative value if given in the early stages of the disease.

"It is anticipated that most of the range stockmen will use this new serum. The losses caused by blackleg in Arizona are only second to that of starvation. There are possibly 30,000 head of young stock that die annually in Arizona from this disease alone, and the loss amounts to fully a million dollars a year. There is absolutely no need of sustaining this loss if stockmen will vaccinate their animals.

"Another important consideration in overcoming the blackleg is that of burning all the carcasses of animals that die of this disease. If carcasses are burnt the germs which cause the disease will be destroyed, and no doubt in time the germs will be exterminated.

POINTS IN SELECTING BREEDING EWES

One of the most important factors in starting the farm flock is to start right by selecting the proper kind of breeding ewes. Select ewes with good udders. The udders should be soft, pliable, and free from any hard knots. "Good solid mouths" should be selected. Ewes with part of their teeth gone, or the "nippers" loose or badly worn must have special care and attention. Select ewes that are in good general health and thrift. Avoid the extremely thin, emaciated ewes, but do not go to the other extreme and select the fat ewes. Fat ewes too frequently are not regular breeders, and carry their flesh because they have not raised a lamb the previous season. Look for good fleece, that is, one of good length and strength, also densely covering the body. Look for ewes of good size, and of a blocky mutton conformation. These are the important points as seen by Howard Hackedorn of the University of Missouri college of agriculture.

Breeding ewes can be bought at any of the stockyard markets from now until late in the fall.

Plant an acre for the shell hounded farmers of "No Man's Land."

LARGER MILK DEMAND FOLLOWS PROHIBITION

Increased demand for milk following curtailment of brewing in the United States is a probable development in the nation's food situation during the coming year. In a recent conference with food administration officials at Washington, R. C. Reed, secretary of the Michigan Milk Producers' Association, presented facts of unusual interest to all dairymen. Since last May when Detroit became dry consumption of milk, according to Mr. Reed, increased 20 per cent and of buttermilk about 50 per cent. To satisfy this sudden demand it became necessary to bring in milk from greater distances and to a considerable extent utilize the supply formerly made into cheese.

Not only has consumption of milk increased in private homes but many saloons have been converted into lunch rooms and ice cream parlors. These establishments have become new outlets for milk and its numerous products. The large increase in buttermilk consumption is explained

How the packer is saving millions out of waste

—and how this results in higher cattle prices for the stockman

The development of by-products out of waste means a saving of about one hundred and fifty million dollars annually—a sum sufficient to keep New York's six million people supplied with meat for six months.

THERE was a time when the steer was handled solely for its edible meat, its hide, and its tallow.

The remainder of the animal, in weight totaling many millions of pounds annually, was thrown away—a sheer waste.

Today virtually all of this former waste is utilized. Over 250 articles are now contributed by the steer to human needs, and a larger proportion of the animal is saved for human food.

At the time of writing $135 is, on the average, the price paid for the average beef animal to the stockman by Swift & Company.

But if the old order of waste still prevailed and only the hide and tallow were saved, Swift & Company would be obliged either to pay not more than $125 to the stockman, or to charge the public higher meat prices.

Thus, you see, by-product utilization results in a saving of about $10 per animal—a saving which, when multiplied by the total number of cattle dressed annually by Swift & Company, over two million, amounts to more than twenty million dollars annually. This saving goes to the stockman in higher cattle prices and to the consumer in lower meat prices.

If applied to the entire number of cattle dressed annually in America, approximately fifteen million, this saving would amount to about one hundred and fifty million dollars annually.

The real development of by-products came with the development of the larger packing organizations.

Success was attained not easily, but by patient effort, by exhaustive experiment, by intense specialization. It has been a big job and has called for big methods—a job far beyond the resources of the old, unorganized system of local meat dressing.

Not only are the by-products saved but their value has been increased through better handling of hides, fats, and other edible portions of the steer.

Swift & Company is glad to have had a part in this development. It is an achievement of thrift—an achievement that has made possible today lower meat prices to the consumer and higher prices to the producer of cattle than would have been possible under the old methods.

Swift & Company, U. S. A.

A nation-wide organization owned by more than 22,000 stockholders

PURE BRED REGIST'D HOLSTEINS

Tuberculin Tested State Supervision Individuality Breeding Production Butter Fat Everything Guaranteed

King Korndyke Pontiac

(shown above)

is transmitting a high excellence of type and production to his sons and daughters. His daughters are the straight backed, wide hipped, deep bodied sort with well balanced udders of good form and texture, and good, well placed teats.

His sons are uniformly well marked, straight in topline, deep in chest and barrel, strong boned, with plenty of quality and vigor. Why not buy one of his young sons now, while our prices are still far below real value. Remember that we will give you most liberal terms on your payments.

Prince Gelsche Walker Korndyke

(shown below)

JANE GARDEN FARM

SACRAMENTO — CALIF.

FRED W. KIESEL, PROP'R. C. W. YOUNG, SUP'T.

Briggs

We Have Been Telling You

that PRINCE RIVERSIDE WALKER is siring a mighty fine lot of calves in our herd, and prospective buyers who have come to look at his young sons have agreed with us for we have sold right down to calves all the time.

Now we have some expert opinion on the young sons and daughters of "Prince," in the form of awards at the recent California State Fair in the hot competition of the younger classes. Sons and daughters of PRINCE RIVERSIDE WALKER were placed as follows by Judge Scribner:

First Junior Bull Calf.
Fifth Junior Bull Calf.
Reserve Junior Champion Bull.
Second Senior Heifer Calf.
Fifth Senior Heifer Calf.
Reserve Junior Champion Heifer.
First Prize Breeders Young Herd contained some of his daughters.
Second Prize Calf Herd.
First Prize Produce of Dam, won by his twin sons.

Hadn't you better consider one of his young sons to head your herd, securing a rare combination of breeding and type?

Our Entire Herd is Tuberculin Tested

P. S.—Our junior herd sire, King Korndyke Pontiac 20th, was a second in class at the State Fair to the bull that was again made grand champion.

Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

Alfalfa Seed

Common Variety 20c. per lb. Smooth Peruvian 27½ c. per lb.
Hairy Peruvian 39c. per lb.

S-E-L-E-C-T-E-D S-E-E-D

Delivery to You by Prepaid Freight

Delay Buying Until You Have Compared My Samples With Seed Others Offer

E. F. Sanguinetti Yuma, Arizona

California Cultivator
Costs $1 per Year

by its mild acidity, which seems to allay the alcoholic craving.

While the Detroit percentages should not be considered an exact index to future conditions in other cities, they emphasize the present importance of dairy products in the world food program. Curtailment in the supply of alcoholic beverages and similar drinks may be expected to stimulate demand for milk to a very material degree.

Time for Filling Silo

"The time to fill the silo is near at hand" says R. W. Clark, of the Colorado agricultural college. "The farmer, in filling his silo, needs labor and the townsmen can help in this respect. Every dollar that the silo makes will be spent with the business people of the nearest town. If labor cannot be had our silos will not be filled. This was the case last year, let it not happen again this year.

"Two years ago one silo in eastern Colorado made its owner $1500. It enabled him to keep his cattle, otherwise he would have had to sell them at sacrifice prices. In another case a farmer, by filling his silo, was able to keep all his livestock and support his family comfortably through the winter. He said it would have been necessary for him to have sold his livestock and left home to support his wife and children had it not been for the silo. We ought to have a silo on every farm, but as we have not, let us do the next best thing and fill every one that we do have.

Making Silage

"When to fill—Cut corn in natural stage before leaves dry. Cut kaffir and sorghum when seeds turn color and leaves are still green.

"How to fill—Cut feed in short pieces. Grind the cutter knives sharp. Mix leaves, stalks, and ears thoroughly. Tramp solidly, especially at edge. Add water if it is dry feed."

C. A. Briggs

Another of the Cultivator's faithful workers who soons goes overseas. He may land in the trenches but if he does it will be as a dispenser of soup and coffee to the boys who are doing the fighting. In other words, Mr. Briggs is going into the Y. M. C. A. service, which means any work which makes for more fit fighters.

Cottonseed Meal---Cottonseed Feed

Cottonseed meal contains more protein, the chief food constituent of cotton seed, and less fiber than does cottonseed feed. Cottonseed meal is generally recognized as a product of the cotton seed only, composed principally of the kernel with such portions of the hull as is necessary in the manufacture of oil, and as containing at least 36 per cent protein. Cottonseed feed, which may more properly be labeled, "cottonseed meal and hulls," is generally recognized as a mixture of cottonseed meal and cottonseed hulls, containing less than 36 per cent protein. If to cottonseed meal, as defined above, cottonseed hulls are added, the mixture can not be labeled as cottonseed meal, under the terms of the federal food and drugs act and the food laws of many states.

Buyers should distinguish carefully between cottonseed meal and cottonseed feed, according to officials of the bureau of chemistry, United States department of agriculture. While cot-

BUTTER FAT CONTEST STATE FAIR, 1918 TOTALS FOR THREE DAYS

No.	Breed.	Prize	Age, Years	Age, Months	Days in Milk	Pounds Milk	Total Solids Per Cent.	Total Solids Pounds	Butterfat Per Cent.	Butterfat Pounds
Cows Four Years or Over										
1.	Holstein,	first	6	9	59	209.6	11.5	24.14	3.79	7.950
2.	Holstein,	second	7	..	4	192.0	12.5	23.96	3.54	6.792
3.	Jersey,	third	4	2	56	143.0	13.1	18.69	4.59	6.565
4.	Jersey,	fourth	8	1	47	134.0	13.8	18.52	4.51	6.045
5.	Jersey		8	..	..	130.3	13.4	17.42	4.40	5.735
6.	Holstein		4	3	..	167.9	11.4	19.10	3.34	5.615
Cows 30 Months and Under Four Years										
7.	Holstein,	first	3	7	15	151.1	11.6	17.49	3.81	5.000
8.	Jersey		3	6	..	74.0	14.6	10.81	5.36	3.968
9.	Jersey		3	..	10	74.9	13.9	10.44	4.93	3.690
Cows Under 30 Months										
10.	Jersey,	first	1	8	41	92.4	14.2	13.10	5.09	4.701
11.	Jersey,	second	2	6	87	83.0	14.4	11.98	5.42	4.495
12.	Jersey,	third	2	6	..	71.8	14.0	10.08	5.01	3.592
13.	Jersey,	fourth	2	4	29	68.8	14.0	9.66	5.05	3.474

No. 1, Senorita Ciruela Mechthilde 3d, and 2, Model Bonnie Echo, owned by W. J. Higdon, Tulare; 3, Lady Kate's Rosette and 4, Mamie Owl, owned by D. F. Conant, Modesto; 5, Valet's Golden Biddle of L., 8, Miss Dalsy of Mossdale, and 12, Rose of Mossdale, owned by J. E. Thorpe, Lockeford; 6, Sigma of Linwood, and 7, Queen Pontiac Ch. Korndyke, owned by J. S. Gibson Co., Williams; 9, Goldie of Rico Vegas, owned by C. D. Hayworth, Modesto; 10, Lucile of Venadera, owned by Guy H. Miller, Modesto; 11, Brilliant Jersey Queen, owned by H. W. Hand, Orland; 13, Alta La Fosse, owned by S. F. Williams, Orland.

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Caustic Balsam

Has Imitators But No Competitors

A Safe, Speedy, Positive Remedy for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs and Lameness from Spavin, Ringbone and other bony tumors. Cures skin diseases or Parasites, Thrush, Diptheria. Removes Bunches from Horses or Cattle.

As a **Human Liniment** and Antiseptic for external use it is invaluable.

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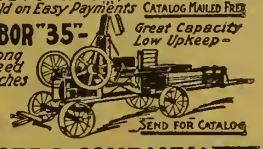
THE ANN ARBOR "35" - Great Capacity Low Upkeep -

Especially Strong for Alfalfa - Feed Hopper only 39 Inches from Ground - Largest feed Opening -



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Careful attention given to mail orders

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Bred for Range Purposes and of Pure Scotch Blood Lines.

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Registered Shorthorns

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Berkshires—Both Sexes

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Duroc-Jersey Hogs

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Gilts Bred to Cherry Volunteer 2nd for August Farrow For Sale

tonseed feed containing a reasonable quantity of cottonseed meal is a good feed, the hulls have very low feeding value as compared with the meal. The mixture having less food value should sell for a less price than cottonseed meal. Buyers in many instances, failing to distinguish between cottonseed meal and cottonseed feed have paid as much, or nearly as much, for the feed as for the meal. This has been the case especially when the manufacturer of cottonseed feed has sold it under the designation, "cottonseed feed meal."

WANING HORSEPOWER ON FRENCH FARMS

After the present harvest is gathered, French farms are to be almost stripped of horses suitable for military purposes. The requisitioning of horses has already caused farmers a great deal of hardship, and although this measure is necessary to supply the army it is being done with the greatest consideration possible.

Farmers possessing only one horse are not to be deprived of their animals. Requisitioning committees have been instructed also to take only a certain proportion of the animals of others, and most of the horses selected are not to be removed from farms until after the crops are gathered.

The rapidly decreasing animal power of France will demand still greater human efforts of the war-weary populations, and especially of the women and crippled men who are now operating most of the farms. Such conditions emphasize the need for throwing the full military and agricultural strength of America into the war to win it as quickly as possible.

STABILIZING COTTONSEED MEAL

In spite of the lower yield of cotton and the increased cost of production, the organized cottonseed producers have agreed with the food administration to stabilize the price of cottonseed at the average price of last year. This is a concession on their part to the cattle feeding and dairy interests in this country. The prices will vary from $64 to $72 per ton in carload lots, f. o. b., cars, depending upon the yield in oil.

Differentials have been fixed for crushing seed on the basis of last year's cost and regulated profit of last year, plus the increased cost imposed by change in labor, transportation and supplies. As a result the price of meal is about $3.00 per ton higher than last year.

The food administration feels satisfied that stabilization of this industry by voluntary agreements of all concerned will greatly eliminate speculation and all interests will be protected. Details of the seed prices assessed to local zones and yields will be issued by the federal food administration.

KEEP POISONED GRAIN AWAY FROM STOCK

Again the price of carelessness has been paid. In this case it is in the loss of seven horses which fed from a sack of poisoned grain. The parties in question who have suffered this loss are the Amabile Brothers of Volta, Merced County. It seems they purchased a sack of poisoned barley for ground squirrel eradication and while they went to dinner the horses helped themselves. Despite the prompt services of a competent veterinarian, it was impossible to save them.

Manufacture and sale of prints of butter weighing less than one pound prohibited. On and after September 15, 1918, no licensee shall manufacture or sell units of butter in print form that weigh less than one pound; provided, that this rule shall not prevent a retailer from cutting a unit weighing one pound or more and selling a portion thereof to a customer.

The Southern California fair to be held at Riverside will offer occasion for the first Duroc-Jersey futurity. Two hundred and fifty dollars in prizes will be offered.

Reports on butter market in San Francisco will soon be made by the United States bureau of markets.

When a man is selfish he shows himself a poor judge of men.

Insure Big Results!

Plant Germain's Hairy Peruvian Alfalfa Seed!

Wideawake ranchers are buying *Germain's* reliable, *proven* seed now.

Hundreds of orders remained unfilled last year, due to the tremendous demand. Our supply is limited—very little seed has been produced—and the demand this season will be greater than ever.

Hay prices are soaring. It is up to every rancher to make his field produce to the utmost.

We successfully introduced this wonderful type of seed in this section. And we stand solidly back of it. We guarantee it to be the true Hairy Peruvian strain. To insure perfect results we advise you to buy only the special Germain variety.

Place your orders now and avoid disappointment. Special folder containing testimonials, upon request. When you write, please mention this magazine.

CAUTION—For your protection Germain's Hairy Peruvian Alfalfa Seed is sold ONLY in sealed and stenciled bags.

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Seed & Plant Co.
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Plant a proven product

Economy Stock Powder

Not a stock food, but a medicine. No salt, no oilmeal, no mill sweepings. Not a cure-all, but a genuine conditioner. Helps thousands of the best breeders and hog-raisers in the country raise profitable hogs.

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Expert Live Stock Auctioneers

Pure Bred Stock Sales a Specialty

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Ensilage Cutter Beats Them All

If you have the best silo it is the Simplex—an all one piece stave silo.
For particulars write

Santa Fe Lumber Co.

16 California St. *San Francisco*

Some Real Herd Bulls in the Second Modesto Sale

Modesto, California
Thursday, October 17, 1918

65 REGISTERED HOLSTEINS 65

CONTRIBUTORS:

BRIDGFORD COMPANY, Knightsen.
LUTHER THOMPSON, Modesto.
J. S. GIBSON CO., Williams.
C. G. OUTLAND, Modesto
R. L. HOLMES, Modesto.
J. M. CAMPBELL, Escalon.

HUBBAVALE ARTIS TWISK NETHERLAND, C. G. Outland's herd sire. He is by a son of Artis Pontiac Winana out of a 31.32 pound daughter of Lord Netherland De Kol, and is out of a 30.27 pound daughter of Aaggie Cornucopia 3d's Count. He is a choice individual, and there are several of his young sons and daughters, as well as a fine lot of cows and heifers bred to him in this sale. He would not be for sale were it not for the fact that Mr. Outland is making a complete dispersal of his herd, having sold his farm.

SIR CHIMACUM WAYNE WOODCREST, who is by Sir Chimacum Wayne, son of Chimacum Wayne Boone, highest yearly record daughter of Sir Veeman Hengerveld, and out of Chimacum Maud, who made 624.8 pounds milk and 29.81 pounds butter in seven days as a junior three-year old last year. She is a splendid candidate for a 35 pound record at next freshening. The three nearest dams of Sir Chimacum Wayne Woodcrest average 643.3 pounds milk and 29.98 pounds butter in seven days, while his dam's dam and sire's dam average 24,036.9 pounds milk and 1047.44 pounds butter in one year. He is a show bull and will make someone a high class herd sire.

KING SEGIS ABBEKERK SARCASTIC, out of Chimacum Maud, same as preceding bull. He is sired by King Segis Alcartra Abbekerk, who is by the $50,000 bull King Segis Pontiac Alcartra and out of a 30.27 pound four year old daughter of Tidy Abbekerk Prince. He is good enough to head a high class herd, and don't forget that his dam is due to freshen again on December 15 this year as a four year old, and is one of the best prospects in the state for a very high record.

SEGIS PONTIAC DE KOL BURKE WALKER, sired by Segis Pontiac De Kol Burke, son of the former world's record cow Riverside Sadie De Kol Burke, and sire of the state record heifer Aralia De Kol Pontiac Mead, who made 932.34 pounds butter in one year as a senior two year old, 34.39 pounds butter in seven days and 138.09 pounds in 30 days as a senior three year old. His dam is Charlotte Walker 2nd, 25.05 pounds butter in seven days, and she is a three-quarters sister to Prince Gelsche Walker, whose daughters hold state and world's records. This is a splendidly bred young bull, bred in the most popular blood lines and he belongs at the head of a good herd.

CHIEF MODESTO WALKER who is by Prince Hiske Walker, full brother to the former state record junior four year old, Lady Hiske Walker, and out of Senorita Ceres Mechthilde, the cow that topped the Modesto Sale last spring. He was fifth prize senior bull calf at this year's state fair, and the judge remarked that he had as much quality as any bull in the class.

SEGIS ABBEKERK AAGGIE FAYNE, who is by King Segis Alcartra Abbekerk, son of the $50,000 bull King Segis Pontiac Alcartra and a 30 pound four year old daughter of Tidy Abbekerk Prince. His dam is a 21.97 pound three year old, due to freshen December 22 as a four year old, and is considered by the Bridgford Company one of their best prospects for a 30 pound record.

THE FEMALES

include more high record cows, daughters of high record sires and dams, and cows and heifers bred to 29, 30 and 40 pound sires, than have been sold before in one sale in the San Joaquin Valley. Among them: A 27.86 pound show cow; a 23.06 pound senior four year old; a 25 pound cow; a 24 pound cow; a 20 pound cow with over 600 pounds butter in one year; a 25 pound cow with over 800 pound butter in one year; A HEIFER WHOSE FOUR NEAREST DAMS AVERAGE 33.80 POUNDS BUTTER IN SEVEN DAYS; A DAUGHTER OF PRINCE GELSCHE WALKER; and an excellent lot of young cows, some with good records, heifers in calf to high record bulls, and a few heifer calves sired by the 30 pound bull Hubbavale Artis Twisk Netherland.

You Should Find What You Want In This Sale

Every animal guaranteed to be a breeder; every animal over six months of age tuberculin tested and sold subject to tuberculin retest by the purchaser.

Management

California Breeders Sales and Pedigree Company

J. M. Henderson, Jr., President — C. L. Hughes, Sales Manager

Sacramento, California.

Auctioneers—Col. Ben A. Rhoades; Col. Cy N. Clark.

The Best is Good Enough for You

PIGS BY NOTED SIRES

DUROC JERSEYS

High Orion 221329, has a refused price of $3,500; Great Wonder 180989, Grand Champion at Iowa; Giant Invincible 208823, heads Waltmeyers Iowa herd; King Orion Cherry 80765, first Junior Yearling, Indiana and Ohio; King of Orions 240249, highest priced pig ever sold; Model Crimson Wonder 181217 a noted prize winner. Russel's Model 205512, second place at Nebraska.

GET ONE OF THEIR PIGS

H. P. Slocum and Sons

Willows, California

Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY
IT MAKES THEM FAT

Hauser Packing Co. — Los Angeles

Creamcup Holsteins Headed by the 33.92 pound bull Creamcup Champion Pontiac Burke. A few young bulls for sale. M. M. HOLDRIDGE, Rt. A, Box 437, San Jose, Cal.

Field Notes from the Live Stock Men

Young and Clark, Lodi, report sales of Poland-Chinas. Boar pig to Jas. H. Bell, Maxwell; boar pig to H. H. Windmiller, Elk Grove; a junior boar pig for herd sire to J. W. Wakefield, Acampo; senior boar pig to American Sugar Beet Company, Chino; junior boar pig to Thos. Piercell, Meridlan.

W. A. Young of Young and Clark, Poland-China breeders at Lodi, states that he is negotiating with Iowa breeders for a number of fine sows of the same blood lines as those of his champion and grand champion stock.

J. E. Thorp, Lockeford, reports sales of Jersey cattle. Yearling heifer to E. F. Smith, Haywards; yearling heifer to Martha Michaelson, Isleton; heifer calf to D. T. A. Tapely, Marysville; senior yearling bull to Lee Bleekmore, Lakeport, and also a Duroc Jersey boar to the J. S. Gibson Company, Williams. Mr. Thorp won a whole flock of cups at the state fair at Sacramento and the Glenn County fair at Orland, California Jersey Breeders' Association cup at Sacramento for the best five Jersey cows in milk, Butte City Ranch cup for the best Duroc Jersey exhibit at Glenn County fair, L. H. Linbarger's special sweepstakes over all breeds of swine at the same fair, Bank of Orland cup for best dairy cow same fair and the National Duroc Jersey Record Association's cup for best litter of pigs farrowed since March 1. This was awarded at Sacramento. Mr. Thorp plans to show at Fresno, Riverside, Los Angeles and San Francisco.

N. W. Thompson, Patterson, has just got in a shipment of quality stallions selected from the best of the Eastern stock, 18 Percherons and four fine blocky Belgians. Mr. Thompson finds the supply of good horses in practically an exhausted condition and he had to travel over several states before finding animals measuring up to his exacting requirements. None but good ones were brought out in his shipment.

The Redwoods Ayrshire Farm, at La Honda, San Mateo County, reports that they have the good fortune to get three heifers from Ada Rome of Willowoak, one of their registered purebred Ayrshire cows. Willowmoor Robin Hood 32d is the father of the triplets. All the calves are well marked, perfectly formed and living.

E. B. McFarland's Aryshires will be shown at the fairs at Fresno, Riverside, Los Angeles, San Francisco.

Elmer Lamb, Ceres, reports sales of Duroc-Jerseys: Boars to Geo. Wingfield, Reno, Nevada; boar to Spreckels Sugar Company, Kings City; boar to Ford Ranch, San Francisco; boar and sow to Dave Rogers, Razelle; bred sow to H. K. Nourse, Walnut Creek; sow to Stanton K. Helsley, Ceres; sow to L. G. Weld, Lancaster; sow to Charles Silva, Sacramento; boar to P. N. Olsen, Turlock; boar to G. F. Stephenson, Merced; sow to John Harder, Montpelier.

H. I. Marsh, Modesto, reports sales of Poland-Chinas: Boar to L. Erlandson, Turlock; boar to C. C. Brown, Durham; two boars to Miller & Lux, Dos Palos; boar to J. H. Kile, Thornton; two boars to Franks & Miller, Antioch; boar to W. F. Cordes, Stockton; boar to Shelton B. Hunter; Bradley; nine boars to Jos. F. Lahaney, San Francisco; boar to E. H. Smith, Los Angeles; bred gilt to D. & H. Rowles, Modesto; bred gilt to J. H. Kendal, Modesto.

W. A. Young, Lodi, plans to root out 20 acres of wine grapes and put it into alfalfa, adding to his herd of Poland-China swine and also starting in the registered Holstein business with a small select herd.

A notable state fair Poland-China sale was that of the entire show herd of Hale I. Marsh to Fred Hartsook of Lankershim. Mr. Marsh will show them at Fresno. Mr. Hartsook will show them at Riverside, Los Angeles and San Francisco.

Eye Diseases Affecting Cattle

A recent report of serious eye diseases of cattle in Texas and New Mexico was published, which has also created some uneasiness on the part of cattlemen in Arizona.

Prof. W. S. Cunningham, assistant animal husbandman of the University of Arizona, has been consulted by a number of stockmen recently, and he makes the following public statement:

"There is a disease affecting the eyes of cattle prevalent in the southern part of the state. There have been many reports of this among range cattle and dairy herds. This disease is called 'infectious keratitis,' or 'pink eye of cattle,' and has been present every summer for several years in certain localities of Arizona. It affects cattle of all ages, but mainly young cattle during the summer, when pollen is present, and it is infectious or contagious.

"The symptoms of the disease are a watery discharge from the eyes, the eyelids become swollen and red, and are held partly closed to shut out the sunlight, a red spot appears in about the center of the eye which later turns white or yellowish white in color, and the entire colored portion of the eye becomes clouded or whitish in appearance. The pupil of the eye may bulge out to a considerable degree because of the eye lens being swollen. In some cases this swelling is so great that the eyeball may burst and cause permanent blindness. All cattle affected with this disease are temporarily, partially or totally blind, but they regain their eyesight in most cases. It usually takes several weeks to effect a cure, and during that time vigorous treatments should be applied.

"For those who cannot conveniently consult or call a veterinarian the following remedies are given: First wash out the eyes well with a saturated solution of boric acid, then twice each day place into the eye four or five drops of a 20 per cent solution of argyrol. This treatment should be kept up persistently until recovery.

"The above treatment, if followed carefully, will cure practically all cases of the disease."

Profits From Raising Percherons

By E. J. Barber

It isn't always the big breeder who is the most successful raising purebred draft horses. The man with a large number of animals oftentimes isn't able to give them the proper care and consequently doesn't get the results he should. I know that I have made more money per dollar invested than most of the big breeders. I have never owned more than one pure bred mare because I am a small farmer. In fact, I have only four work horses on the place. Here is a very good illustration though of what a good pure bred mare can do as compared to a grade mare of equal merit as an individual. Both are grays, about the same age, size, conformation and temperament. In fact, I always work them together. One couldn't tell which was the pure bred by looking at them. Neither of the mares has missed having colts for several years. I always breed them to the same stallion. I was foolish not to have two pedigreed Percheron mares instead of one. Kanitie 89818 (97444) an eight year old imported mare, has had five colts and is safe in foal again to the grand champion stallion, Ildefonse at the 1913 International. One filly I sold as a yearling for $500; a weanling filly brought $250; a stallion weanling brought $300 and her 1917 stud colt I cashed in for $300 at weaning time. This makes a total of $1350, which is considerably more than I paid for the mare in the first place. Her 1918 colt, I think, is clearly the best colt she has ever raised and I feel positive that I will have no trouble in getting $350 for him at six months

DR. HESS Instant Louse Killer Kills Lice

For Use On Your Poultry

Seize the hen and dust Instant Louse Killer into the feathers. The handy sifting-top can makes it convenient to use. Sprinkle it in the nests, on the roosts and floors. Put Instant Louse Killer in the dust bath occasionally—your hens will do the rest. This means louse prevention.

FOR STOCK

With one hand stroke the hair the wrong way, with the other sift in the Louse Killer. Especially good for lousy colts.

GUARANTEED. The dealer will refund your money if it does not do as claimed.

1 lb. 30c, 2½ lbs. 60c (*except in Canada*)

Dr. HESS & CLARK
Ashland **Ohio**

A PATRIOTIC DUTY
IS TO
SAVE YOUR CATTLE.

PROTECT THEM FROM
BLACKLEG
BY USING
Blacklegoids

Double and Single Vaccinations in pill form.

ACCURATE. EASY TO USE. EFFICIENT.

—OR—

GERM-FREE BLACKLEG VACCINE
(Aggressin)

WRITE FOR FREE BOOKLETS ON BLACKLEG.

Animal Industry Department of
PARKE, DAVIS & CO.
DETROIT, MICH.

The Kind of Bull that Pays

Here is a Real Bull for someone

Hiske Senorita 232084

Born March 9, 1917. He is mostly white in color, a fine straight individual, ready for service.
His sire: PRINCE HISKE WALKER, who is by Prince Gelsche Walker and out of Hiske of Riverside, 711.57 pounds butter in one year, who is by Juliana King of Riverside. He is full brother to Lady Hiske Walker, 34.25 pounds butter in seven days as a junior four year old, state record in class when made.
His dam: SENORITA CIRUELA MECHTHILDE 3D, 707.31 pounds butter in one year as a senior three year old. She has seven day records of 25.78 pounds butter from 535.2 pounds milk. She is a big, strong, light colored cow of great dairy capacity. She was fourth in class at this year's California State Fair, and won the butter fat contest over all breeds.
Put HISKE SENORITA at the head of your herd if you want type, production, high per cent of butter fat, and light color. Write for price or come and see him for yourself.

H. E. CORNWELL
R.F.D. B Box 183 Modesto, Cal.

AYRSHIRES

REGISTERED
Herd Sire, Dairy King of Arizona
CHOICE BREEDING STOCK FOR SALE

A. MACMINN
Phoenix *Ariz.*

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

of age. The mare's work has fully paid for her feed.

The grade mare, bred to the same stallions, has raised good colts but I never could get more than a fourth as much for her colts at weaning time, and sometimes I had to carry them until they were yearlings and two year olds. I have never had to keep purebreds that long. I would have been far ahead now if this grade mare had been a registered animal even if she had cost me a thousand dollars.

STATE FAIR DAIRY PRODUCTS EXHIBITS

In giving list of winnings and scoring of milk, cream, etc. at the California state fair, by error we omitted entirely Class 136, Section 1611, Certified Milk. Some exceptionally high scores were made by milk in that class, and we regret that we did not get them in their proper place in the list in last week's Cultivator.

The scores were:

Class 136, Sec. 1611. Certified Milk.
1. University of California, Berkeley, 97.7.
2. Adohr Stock Farm, Van Nuys, 97.6.
3. Hollow Hill, Colton, 96.7.

The University of California received complimentary scoring but was not a competitor in this class, and it will be noted that Adohr Stock Farm of Van Nuys was the first real winner and scored only one-tenth of one per cent under the university.

PROGRESS OF COTTAGE CHEESE CAMPAIGN

Over 580,000 pounds of cottage cheese has been made and consumed in homes as a result of the campaign to increase the making and consumption of cottage cheese of good quality undertaken last spring by the dairy division. Educational work has been done in 40 states, largely through the instrumentality of the women home demonstration agents. Over 2000 meetings and demonstrations have been held before 100,000 people. As a result 41,499 persons have been encouraged to take up the manufacture of cottage cheese. Not only has the manufacturing end been demonstrated, but uses in cookery have also been explained. The campaign, the results of which will continue to spread, has shown the people of the United States a means of utilizing skim milk in the home and creamery in the preparation of a valuable food.

DROUTH FEED FOR STOCK

An emergency drouth time feed for Southwestern stockmen which has previously been overlooked is the desert shrub locally known as soapweed. Its scientific name is yucca. While this plant is not high in nutritive value nor suitable for feed until it has been properly ground, it has been found that in seasons of drouth when range grasses and other sources of feed fail, it can be used to save cattle and sheep from starving. By the addition of a little cottonseed meal with ground yucca a fairly well balanced ration is made.

Because the food material is found mainly in the tree-like trunks it is necessary that they be ground or chopped finely before stock can eat them.

The machines used for cutting yucca have heavy cylinders carrying teeth or knives that rotate before a chopping block to which the plants are fed. One of the large machines run by a 12 or 14 horse power engine with a crew of three men will chop or shred about two tons of soapweed an hour.

WHAT SILAGE IS WORTH AS A FEED

One hundred sixty-five pounds of corn silage will replace 145 pounds of shelled corn and 359 pounds of hay in producing 100 pounds of beef. These figures were arrived at as a result of eight years of feeding tests made at the Indiana experiment station, according to advices recently received at Minnesota University farm. Counting clover hay at $15 a ton, and corn at $1 a bushel, silage is worth $9.22 a ton. With corn at $1.25, silage is worth $10.21 a ton; and with corn at $1.75 silage is worth $12.50 a ton.

90 Head 90 Head 90
Registered Holsteins
At Public Auction
Corcoran, California
Thursday, October 10, 1918

Dispersal of the W. H. Ginn & Son Herd on their farm, one and one-half miles southwest of Corcoran, beginning promptly at 9:30 A. M.

Fresh Cows—Heavy Springers—Bred Heifers
Unbred Heifers—Heifer Calves—Young Bulls

TWENTY-FOUR GREAT GRANDDAUGHTERS OF KING OF THE PONTIACS, all by one sire.

TWENTY-FIVE GREAT GRANDDAUGHTERS OF ARALIA DE KOL, former world's record cow, all by one sire.

Come, and take advantage of one of the best opportunities of the season to buy good registered Holsteins.

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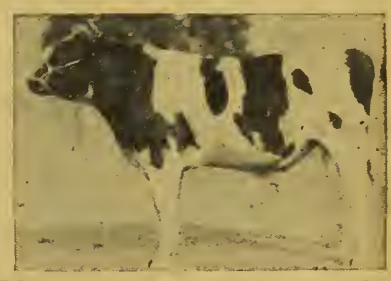
J. M. Henderson, Jr., President C. L. Hughes, Sales Manager
Sacramento, California.
Auctioneer—Col. Ben A. Rhoades, Los Angeles.

Santa Anita Rancho
Anoakia Breeding Farm
REGISTERED HOLSTEINS

A herd of fine individuals, strongly bred in the lines of great production as evidenced by both short and long time records, handled in a manner to produce sound, healthy breeding stock.



Prince Walker Cornucopia

Our junior herd sire, is sired by PRINCE GELSCHE WALKER, and out of a 34.14 pound granddaughter of the first 30 pound cow, Sadie Vale Concordia. He is the highest record son of Prince Gelsche Walker in service. We have for sale a few choice young bulls.

SANTA ANITA RANCHO *Santa Anita, Cal.*
Anita M. Baldwin, Owner - *W. H. Taylor Supt.*

CALIFORNIA CHAMPION HAMPSHIRES

As good as the best and better than the rest. A boar or a sow pig sired by my great herd boar Director, and out of one of my choice sows will add prestige to your herd. I am booking orders now for the pigs of March and April farrow. Write now and place your order.

L. A. DENKER
Boquet Canyon **Saugus, Cal.**

Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, $2145 cash awards. Write to

M. Bassett
Hanford, Kings County, Cal.

Sir Aaggie De Kol Acme 2nd

Five of his seven nearest dams average:
Milk one year....24,089.88 pounds
Butter ..... 1,105.07 pounds

This butter average is equalled by only one other bull of service age in the world. Buy your next bull from

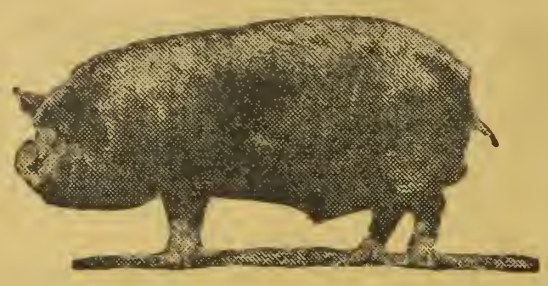
Eldorado Herd
Alex. Whaley, Owner Tulare, Cal.

Western Berkshire Congress Show and Sale

At California Liberty Fair Los Angeles

Thursday, October 24

50 Hogs 50 Hogs



Live Oak Champion, Reserve Grand Champion Boar, California State Fair, 1918

FIFTEEN SHOW HOGS, including Live Oak Champion, the Reserve Grand Champion Boar; Live Oak Laurel, winner in strong Junior Yearling class. First Prize Boar Pig and Junior Champion Boar, also entire First Prize Exhibitor's Herd at California State Fair, 1918. Forty-five Sows, mostly bred, and five Boars, all desirable individuals and of high class Berkshire type and breeding will sell in this sale to the highest bidder. This is an opportunity never before offered in the Pacific Southwest for the established breeder or the beginner to secure Champions and the blood of Champions at a public sale.

Consignors:

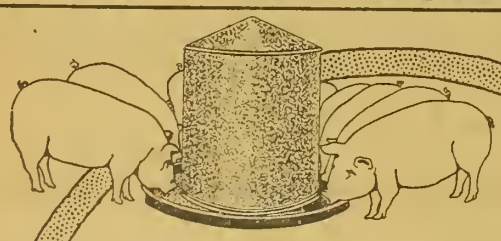
Maplewoode Stock Farm
Homer Hewins, Mgr.
Carruthers Farms
James Mills
Frank Brush
A. B. Humphrey
F. Hall
Santa Anita Ranch

These well-known, reliable breeders have made a draft of the choicest hogs in their herds and deserve the support of every Western Berkshire breeder in making this sale average with the leading Berkshire events of the season.

Congress Meeting and Dinner at Alexandria Hotel, 7 P.M., October 24. All Livestock Men Cordially Invited.

Wm. Carruthers, Pres., Live Oak, Cal.

For Catalog, Write Homer Hewins, Sec'y, Calistoga, Cal.



Turn your grain into pork without waste. This Calco Feeder prevents waste. The grain slides down into the circular trough only as fast as the hogs consume it. No feed can be wasted or rooted out.

Calco Automatic Grain Feeder

is a necessity whether you feed two hogs or two hundred. The high cost of grain demands elimination of waste. The Calco Feeder will pay for itself in a few months in grain saved. Made of rust-resisting "Armco" iron with cast iron base, it is durable, sanitary and can't be upset. Write today for literature.

California Corrugated Culvert Co.
408 Parker St., Berkeley.
419 Leroy St., Los Angeles.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Unsigned communications receive no attention.

Cow with Eye Punctured

I have a cow that had an eye slightly punctured. Where the eyeball was punctured it is turning white or pus is forming. What can be done for it? Please give full directions.—Subscriber, Downey.

If only the front cavity of the eye is punctured you may be able to save it but if the second cavity is broken into the lens is probably dislocated and the sight permanently destroyed. Bathe the eye carefully twice a day with a warm solution of borax. Use a large tablespoon of borax to a pint of water. Use surgeon's cotton for a sponge and wipe out as much of the pus as you can. Then soak some of the cotton in the solution and bind it over the eye. Cover this with a black cloth to keep out all light. In a few days you will know if it will recover. If it improves keep her in a darkened place until the inflammation has subsided so the light will not irritate it. If the injured place turns red and rolls out you had better have the eye removed; then it will not give her any more trouble. If the eye was punctured with something that broke off and left a piece in the eye there is little hope of it ever recovering even if the substance be removed. Either borax or boracic acid may be used as there is practically no difference in the effect. The removal of an eye is not a difficult operation but should be done by those who know the anatomy of the parts and have operated some.

HELP TO HALT HOG-CHOLERA RAVAGES

Farmers should insist that all the stock hogs which they purchase for feeding purposes should be properly vaccinated by competent and conscientious veterinarians in order to prevent the spread of hog cholera. Unlike the larger stockyards of the country, which are properly protected by qualified government representatives, many of the smaller local yards are entirely without safeguards against cholera.

Immature hogs go from the farms of origin mainly because of lack of feed or on account of disease. The purchaser who buys such sick hogs on the market for feeding purposes usually introduces disease into his home herd. To stimulate production and to conserve our available pork supply none but vaccinated, immunized, healthy hogs should be maintained in the feed lot. If the farmer wishes to aid efficiently in halting the Hun, he should help increase our hog supply by routing disease.

AUCTION SALE OF DUROCS

Dr. L. J. Belknap announces an auction sale of Durocs to take place at Garden City Sanitarium, inside city, San Jose, October 2, 1:00 o'clock, a herd of 50 head of the best blood money could buy, Orion Cherry King and Cols, one of the best boars of the breed, 800 pound yearling. Several 400 and 500 pound yearling brood sows, gilts, boars and weanlings. All life immune from cholera.

A FAIR IN LOS ANGELES

Continued from Page 331

Stevens, president of the Tractor and Implement Dealers Association of Southern California, and committeemen who have been working hard for the great exhibit, say there will be one great time in tractor and implement row.

The fair is to be thoroughly educational even as to its sports. There is to be kite flying by school children, swimming contests, competitive drills by various organizations, drills by soldiers and sailors pageants and fireworks. Fifteen hundred marines are staged to be present.

The officers of the Association are R. W. Pridham, president; E. W. Murphy, first vice-president; F. B. Davison, secretary; R. W. Burnham, treasurer. Directors: R. W. Pridham, E. C. Belows, Fred H. Bixby, R. W. Burnham, Volney H. Craig, Marco Hellman, E. G. Judah, W. P. Storey, E. W. Murphy, C. E. Miller, A. J. Scott, Frank Simpson, Dell A. Schweitzer.

Program

Saturday, October 12. Opening Day. Fair to be opened by the Governor. Numerous speakers during the afternoon. Harness and Horse Racing from 1 to 5:30 P. M. Fireworks 8 to 9 P. M.

Sunday, October 13. Army and Navy Day. Swimming Contests, 2 to 3:30 P. M. Army and Navy Drills and Sports 3 to 5 P. M.

Monday, October 14. Liberty Fair Labor Day. Horse racing 1 to 5:30 P. M. Fireworks, 8 to 8:45 P. M. Boxing bouts to be participated in by members of different Training Camps.

Tuesday, October 15. Championship Lawn Tennis to be participated in by

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Pioneer Roofing

You take no chances when you use this reliable roofing.

Since 1888 it has been used by farmers as well as city people on buildings of every kind, size and description.

It is a pioneer in quality as well as name.

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Now is the time to save and you can save by fixing up your old buildings with Pioneer Roofing.

ASK YOUR DEALER
—for Pioneer Roofing and take no substitute if you wish to be thoroughly satisfied. If your dealer can't supply you, write us for samples.

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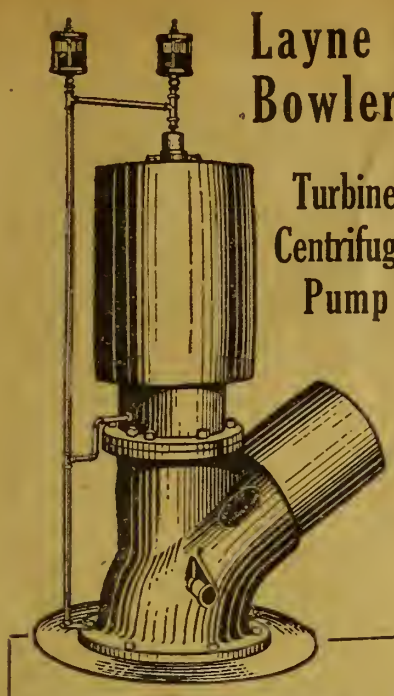

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Turbine Centrifugal Pump

Always in the lead in introducing features that effect bigger savings in time, trouble and money to the pump user, Layne & Bowler Corporation announces the introduction of a number of important refinements. Full information regarding new construction given in Folder No. 30. Ask for it.

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It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards six times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

Try our new brand of VENTILATED Sublimed Sulphur, 100 per cent pure, for making Paste — (Atomic Sulphur) and for Dusting.

For Lime Sulphur Solution, use our DIAMOND S Brand Refined Flour Sulphur. We can furnish you this sulphur at such a low price that it will pay you to mix your own solution.

San Francisco Sulphur Co.
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We are equipped to make immediate shipment. Send for illustrated booklet; price list and samples. Tel. Kearny 871.

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$1600 f.o.b. Los Angeles
F.T. Briles, S. Cal. Distributor
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100,000 feet New and Second-hand Pipe and Casing.

Pipe—½, ¾, 1, 1½, 2, 2½, 3, 3½, 4, 4½, 5, 6, 7, 8, 9, 10, 11, 12, 15 Inch.

Casing—3, 3¼, 3½, 4, 4¼, 4½, 5, 5½, 6, 8, 10, 11, 12, 14 Inch; 2000 feet 6⅝-inch 20-lb. ten-thread.

Riveted Pipe—4, 6, 8, 10, 12, 14, 16, 18 Inch.

All above pipe and casing is practically as good as new, with good threads and couplings on each joint. We also carry valves and fittings, pumps, engines, boilers and rail. See our stock and get prices before buying elsewhere.

ADAMS PIPE WORKS

Bay and Mateo Sts., Los Angeles, Cal.
Phones: F 1917; Bdwy. 1264.

Sutton Sisters and other champions and near-champions of the Pacific Coast, 1 to 3 P. M. Competitive Drills by the numerous organizations of Southern California. Horse racing 1 to 5:30 P. M. Fireworks.

Wednesday, October 16. Motion picture Industries Day. Riverside Day. Horse Racing Day, 1 to 5:30 P. M. An elaborate program to be presented by the most prominent motion picture stars of the world. Fireworks 8 to 8:45 P. M. Further acts by motion picture actors.

Thursday, October 17. California and Native Sons' Day. Opening of Dahlia Show, with more than a million blooms. Meeting of the Los Angeles Farm Bureau Association, 10 to 12 M. Horse Racing, 1 to 5:30 P. M. Horse Show, Society Horse Show, 7 to 11 P. M.

Friday, October 18. Ship building Industries Day. Santa Barbara Day. Continuation of the Dahlia Show. Athletic program to be arranged among the employes not on duty in the Ship Yards. Racing, 1 to 5:30 P. M. Society Horse Racing Show, 7:30 to 11 P. M.

Saturday, October 19. Athletic Day. Orange County and Imperial County Day. Continuation of Dahlia Show. Horse Racing, 1 to 5:30 P. M. Soldiers and Sailors Field Day to be participated in by 1500 Marines, Soldiers and Sailors from numerous training camps. Fireworks.

Sunday, October 20. Song Day. From 8000 to 10,000 voices assembled to sing Patriotic and old-fashioned songs. 2 until 5 P. M.

Monday, October 21. Opening of the Flower Show. Tentative Program by the several city federations. Boxing from 8:30 to 11:30 P. M. Fireworks.

Tuesday, October 22. Mercantile Association Day. Continuation of Flower Show. Horse Racing, 1 to 5:30 P. M. Program for evening and afternoon entertainment under discussion. Fireworks.

Wednesday, October 23. Allies Day. Continuation of Flower Show. Horse Racing, 1 to 5:30 P. M. Intended Pageants to be presented by the different Allied Associations. Fireworks.

Thursday, October 24. Liberty Day. Numerous Speakers. Program for evening entertainment in course of construction. 7 P. M. until closing time, Wrestling by amateurs and professionals.

Friday, October 25. Japan Day.

Saturday, October 26. Mothers and Children's Day. Kite Flying Contest, to be participated in by the different Grammar Schools of Southern California. Army and Navy Football Game, 2:30 to 5 P .M. Contest between Football Team of Naval Reserve Training School, San Pedro, and Camp Kearney. Fireworks.

PREVENTING FOREST FIRES

Continued from Page 333

making camp fires in the midst of dry grass. During the dry season, persons are even prohibited from making camp fires except in certain localities approved by the rangers, where there is no danger of sparks igniting the surrounding grass. The rangers as they travel back and forth over the trails of their district, talk to campers, asking them to be careful and impressing upon them the necessity for extinguishing fires before leaving them, etc. In the valleys, where settlers wish to burn off their fields after a harvest, the state laws require that a permit must first be secured from a ranger or state fire warden, and if he considers that the time is not propitious for such burning, by reason of wind conditions or other causes, permission is denied. The local magistrates cooperate with the federal and state authorities in inflicting heavy fines for violating the fire laws.

Like poverty and some other evils that have been with mankind since the beginning of history, we will probably always have forest fires, but each year, as funds wil permit and as experience guides the way, the government is advancing in the work of fire prevention, and if all of our citizens who have occasion to go into the timbered, or brush-covered regions of our Great West, will be thoughtful in their handling of fire and use ordinary precautions to prevent the starting of even the slightest blaze, the great loss of material and money due to our annual forest fires will be enormously reduced and perhaps entirely avoided.

Did A "Business" Dentist Fill Your Teeth?

If a *low priced* (?) "business" dentist filled your teeth, you will appreciate why the Dental measure **should not pass.**

Amendment No. 21 would permit "operators" with little experience from other States to practise in California **without an examination.**

The California Dental laws are **very strict** now, and the **high standard** must be maintained.

The present law admits all competent dentists.

Low priced **incompetent** dentistry is always the **dearest** in the end.

Keep out the **riff-raff** from other States.

Vote NO ON AMENDMENT **No. 21**

Joint Committee, California Dental Associations.

HAY TOOLS
STEEL STALLS
STALL FITTINGS
SPRING BALANCE MANGERS
STANCHIONS
WATER BOWLS
CALF PENS
COW PENS
BULL PENS
GATES AND FITTINGS
CUPOLAS
VENTILATORS
MANGER DRAINS
GUTTER DRAINS
LITTER CARRIERS
FEED CARRIERS
FEED TRUCKS
HARNESS CARRIERS
MILK CAN CARRIERS
STEEL TRACK
TRACK FITTINGS
SWINGING CRANES

"Louden" Barn Equipment

The dairy rancher has long since learned that the cow is a sensitive animal and anything that adds to the comfort and the cleanliness of her surroundings invariably shows up in the profits at the end of the season.

30% to 40%

Increase in Production

is often the result where clean, comfortable Louden barn equipment replaces the old style uncomfortable and unsanitary kind.

Two Valuable Books Free

Big 112-page book of Modern Barn Plans containing scores of diagrams and illustrations—and the complete Catalog of Louden Barn Equipment.

A Postal Will Bring Them.

California Hydraulic Engineering and Supply Co.

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Grand Champion Boar

Grand Champion Sow

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Berkshires

Forty-three or our litters this year averaged ten to the litter. We sell foundation sows and boars to head your herd from our easy keeping, heavy producing strains. Write to

JAMES MILLS ORCHARDS, Hamilton City, California

Prince Hiske Walker

He is by Prince Gelsche Walker and out of Hiske of Riverside, being therefore full brother to Lady Hiske Walker, 34.25 pounds butter in seven days as a junior four year old, former state record in class.

His offspring are uniformly straight, vigorous, and well marked. A few of his young sons for sale.

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W. F. Mitchell, Owner *Visalia, Cal.*

Today's Dream—Tomorrow's Reality

Electricity offers to the farmer of the present the means of eliminating the monotonous grind from the day's routine.

G-E Motors Save Labor

You can free yourself from the physical exhaustion resulting from farm drudgery if you use G-E motor-driven machinery to milk your cows, separate cream, churn butter, cut feed and ensilage, saw wood, thresh grain, pump water and perform the many other tasks which make up the necessary activities of the working day. The cost for power is less than the wages of one farm hand. Ask your lighting company or our nearest office for full particulars.

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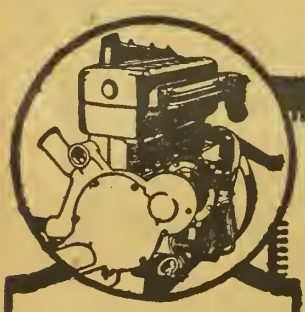

Correct Lubrication for the "L"-Head Type Engine

This, the "L"-Head type of automobile engine, like all *internal combustion engines*, requires an oil that holds its lubricating qualities at cylinder heat, burns clean in the combustion chambers and goes out with exhaust. ZEROLENE fills these requirements perfectly, *because it is correctly refined from selected California asphalt-base crude*

"Proven Entirely Satisfactory"

Only perfect satisfaction can account for the use of ZEROLENE by the majority of automobile owners.

Leading coast distributors also testify that it is "a most satisfactory motor oil."

They know from the records of their service departments—and we know from exhaustive tests—that Zerolene, correctly refined from selected California asphalt-base crude, gives perfect lubrication with least carbon deposit. Get our lubrication chart showing the correct consistency for your car.

At dealers everywhere and Standard Oil Service Stations.

STANDARD OIL COMPANY (California)

ZEROLENE

The Standard Oil for Motor Cars

Your Soil Needs Amboy GYPSUM

California citrus soils are extremely deficient in limes, sulphates. Amboy Gypsum furnishes these—makes available other necessary elements. Increases crop yield. GYPSUM BOOKLET FREE. CONSOLIDATED PAC. CEMENT PLASTER CO., 614 San Fernando Bldg., Los Angeles.

Combating Weevils in Stored Seed

THE serious losses caused by bean and pea weevils, which amounts to millions of dollars annually, are largely preventable, and by putting a stop to them a valuable and much needed source of the nation's food supply can be saved. No satisfactory artificial remedies can be applied to kill weevil grubs in beans, peas or cowpeas growing in the field, but they can be easily and effectively controlled afterwards, if the necessary care is given, by methods described in a new publication of the United States department of agriculture, by E. A. Back and A. B. Duckett. The crop should be harvested as soon as possible after maturity, according to the bulletin, and the seeds threshed or shelled and treated by fumigation, heat or cold storage in order to kill the weevils in them before they can increase in numbers and carry on their destructive work.

Harvest All Seed

In gathering the crop exercise care to leave no portion of it in the field, as seeds scattered on the ground or left in shattered pods on the dried vines may carry the pest over winter and furnish a supply of weevils the following summer. The crop should be harvested as soon as possible after reaching maturity and the seed threshed or shelled soon afterwards. Storing in the pod does not confine the weevils. Immediately on placing the seed in storage, fumigate with carbon disulphid or carbon tetrachlorid. These chemicals when exposed to the air vaporize into a heavy poisonous gas which immediately kills the weevil. Carbon disulphid is the more generally used though carbon tetrachlorid has the advantage of not being inflammable. Seed to be fumigated should be placed in an air tight container, such as a tin can, barrel or bin. The chemicals, used at the rate of from two to four pounds to each 500 cubic feet of space to be fumigated, should be poured over the top of the seed and fumigation should continue for from 24 to 48 hours. As weevils breed generation after generation in stored seeds, the seeds should be watched to make sure that they do not become reinfected. In such case fumigation should be repeated.

Killing by Heating

When there is only a small quantity of seed the weevil may be killed by heating the seed in the oven for several hours. The oven should not be hotter than 120 to 145 degrees F. Dipping seed in boiling water for one minute is also an effective remedy. Weevils will not feed or cause damage at low temperatures, and if seed can be kept in cold storage at a temperature of 32 to 43 degrees F. no trouble from this pest will result. Seeds once treated should be stored in rooms free from adult weevils, or placed in tight barrels or sacks made of closely woven material, and should be examined occasionally as a guard against subsequent infestation.

American and German Finances

Pessimistic Americans who view with alarm our increasing national obligations may derive a great deal of comfort from a comparison of the financial condition of the United States contrasted with that of Germany.

The total resources of the United States are estimated at about $250,000,000,000; our annual earnings are estimated at about $50,000,000,000. Our national debt, including the third liberty loan, may be put around $12,000,000,000.

Before the war our government was spending about $1,000,000,000 a year. When the war is ended, interest charges, less the interest collected from our loans to our allies, government insurance expenses, and other necessary expenditures growing out of the war may conservatively be estimated at something like $1,000,000,000. We are confronted, therefore when peace comes, with raising only a couple of billions a year revenue, a slight task for a nation of such tremendous wealth, capacity, and resources.

The resources of Germany before the war were estimated to be $80,000,000,000. The annual expenditures then of the imperial government were about $800,000,000. Her debt now is $30,000,000,000, and her resources and man power have been severely impaired. After the war she is confronted with additional expenditures growing out of the war totaling some $4,000,000,000.

The interest of her war debt, even if the debt grows no larger, will be about $1,500,000,000. Although she is niggardly in her pensions to private soldiers and their families, $1,000,000,000 a year would hardly suffice to pay even small pensions to her injured and the families of her soldiers who have been killed. Her war debt must be paid some time and a sinking fund of 5 per cent would add $1,500,000,000 to her annual taxation. Here is a total increase of $4,000,000,000 all due to the war.

Of course both the United States and Germany may greatly increase their debts, but the increase will not change the relative situations.

The German government has drained the German people of their gold, even their jewels and heirlooms, and yet the Imperial Bank of Germany now has but little over $500,000,000 of gold in its vaults. The United States has made no special effort to obtain gold, has made no call upon the people for the precious metal, and yet today has in its treasury vaults practically $2,500,000,000 of gold coin and bullion.

SOME HOME CANNING DIFFICULTIES AND HOW TO AVOID THEM

By O. H. Benson

Canned corn and peas (as well as beans and asparagus) may show no signs of spoilage and still when opened have a sour taste and a disagreeable odor. This specific trouble is known to the canner as "flat-sour,"

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Pomona DUPLEX-PLUNGER Pumps

One Pump Will Do Your Work

Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

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Pomona Mfg. Co.

POMONA, CAL.

and can be avoided if the canner will use fresh product; that is, one which has not been gathered more than five or six hours, and will blanch, cold-dip, and pack one jar of product at a time, and place each jar in the canner as it is packed. The first jars in will not be affected by the extra cooking When the steam pressure canner is used the jars or cans may be placed in the retort and the cover placed in position but not clamped down until the retort is filled. Rapid cooling of the product prevents overcooking, clarifies the liquid, and preserves the shape and texture.

Corn seems to give the most trouble, but with a little care and study this product may be canned as easily as any other grown in the garden. A little experience in selecting the ear and ability to recognize corn that is just between the milk and the dough stage are important. Blanch not longer than five minutes and then cold dip (for which purpose a plunge in cold water is sufficient). Cut the corn from the cob with a sharp knife and put it at once into sterilized jars. As the corn expands a little in processing the jars should not be filled quite full. Best results can be accomplished when two persons cut and one person fills. If it is necessary for one person to work alone, cut off sufficient corn to fill one jar, pour on boiling water, add salt, place the rubber and the cap in position, and put the jar at once into the canner. A little overcooking does not injure the quality of canned corn. Corn that has a cheesy appearance after canning had reached the dough stage before being packed. Corn should never be allowed to remain in the cold dip, and large quantities should not be dipped at one time unless sufficient help is available to handle the product quickly. Water logged or soaked corn indicates slow and improper packing.

When peas are keeping well but the liquid shows a cloudy or hazy appearance, it indicates that the product was roughly handled in blanching and cold dipping, or that split or broken peas were not removed before packing. When peas are too old and blanching is not carefully done the skins crack and the liquid becomes cloudy. Some waters of peculiar mineral content have a tendency to increase cloudiness.

U. S. BUREAU OF MARKETS MAY BE GIVEN JURISDICTION OVER QUALITY OF PRODUCE

State Horticultural Commissioner Hecke writes that from information recently received at his office, there is in the present agricultural legislation now before Congress a measure to permit inspectors of the United States bureau of markets to pass upon the quality of produce which may be subject to dispute between shippers and commission men. Under the present arrangement, federal inspectors report only on the condition of the produce in question. The far-reaching effect which this extension of the powers of the men will have in correcting the shortcomings of unscrupulous shippers is well understood and greatly appreciated by the bulk of the fruit men of California. In a number of cases the majority have suffered for the sins of the few. Perhaps the general effect which such an extension of power will have is not generally understood. However, when we understand that reports of federal inspectors are accepted in courts as prima facie evidence before the law, we may appreciate their true significance.

DON'T PUT ANT PASTE ON LIVE BARK

J. R. Moeller of Los Angeles has had an experience in applying ant paste to fig trees and killing the trees, which makes a word of warning from him valuable. He says that a couple of years ago his fig trees were seriously infested with ants, and in order to keep all the fruits from being injured he drew a band of ant paste about the trunk of the tree, smearing directly on the bark. The bark later turned dark brown and ultimately died. All trees so treated were killed.

This experiment was tried only on fig trees, and what the effect would have been on others is only conjectural, but plainly this remedy should be used with caution. It would probably be safe to use cardboard, or other nonabsorbing substance, on which the paste might be smeared and do equally as good work with the ants. In any case don't smear ant paste on trees until one has carefully experimented.

LIBERTY LOAN INTEREST RATE

Secretary McAdoo has definitely announced that the Fourth Liberty Loan bonds will bear 4¼ per cent interest.

The secretary has been insistent that the government interest rate should be stabilized at 4¼ per cent. He points out that a raise in the rate of interest of only one-fourth of one per cent on $10,000,000,000 of government bonds would mean an annual increase of $25,000,000 in interest charges, and that this money would have to be raised by increased taxation and paid by the people of the country. It would not be paid by one class only, because there are consumption as well as other kinds of taxes, and the consumption taxes reach every class of people.

"As an intelligent people," said Secretary McAdoo during the Third Liberty Loan campaign, "we should now make a stand for the financing of our government during the period of this war at a stabilized rate of interest, say at 4¼ per cent per annum, so that all business and all investments may be adjusted to that basis, and so that we ourselves may protect ourselves against successively increased rates of interest on government loans."

Neither our patriotism nor our support of the Liberty Loans are measured in fractions of per cent.

AMERICAN-EGYPTIAN COTTON A SUCCESS

The establishing of the American-Egyptian cotton industry in the irrigated valleys of the Southwest is assured, according to the United States department of agriculture, if present demands are maintained, prices remain near the present level, and if labor is available to harvest the large crops which have been planted.

War demands have had much to do with the recent phenomenal growth, much of the product being taken for special automobile tires, and for airplane and balloon fabrics.

The industry was started in the Salt River Valley of Arizona, and has since spread to the Yuma reclamation project in California and Arizona, the Gila Valley of Arizona, and the Imperial, Palo Verde, and San Joaquin Valleys of California. The crop has increased in value from $44,000 in 1912 to $6,000,000 in 1917, and the area planted for this year's harvest, 86,500 acres, is more than double that planted last year.

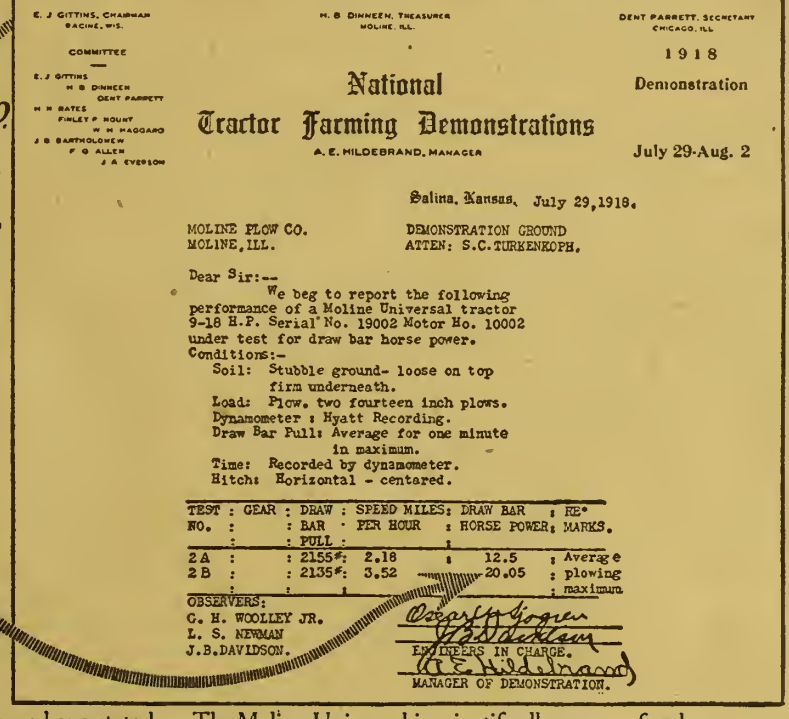
NOT ECONOMICAL TO MANURE CLOVER

Many farmers after repeated failures with clover, in desperation resort to manuring the land in an effort to grow the crop. This might be justified if manuring insured a good crop. That is not always the case, however, and the practice in general is of very questioinable value, particularly when clover can be successfully grown by providing an adequate supply of phosphorus and lime in the soil.

The rule should be to keep the soil well stocked with phosphates and lime. Under such conditions, the clover in harmony with certain soil organisms will feed upon atmospheric nitrogen and enrich the soil with this element which in commercial form costs 40 cents a pound.

When you find a good many things out of whack at the same time, and prices high and things scarce, you may know that the fad of depending upon others to do what one ought to do for himself is causing lots of inconvenience.

Moline-Universal Makes Wonderful Record at National Tractor Demonstration


E. J GITTINS, CHAIRMAN, RACINE, WIS. — H. B DINNEEN, TREASURER, MOLINE, ILL. — DENT PARRETT, SECRETARY, CHICAGO, ILL.

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National Tractor Farming Demonstrations
A. E. HILDEBRAND, MANAGER

1918 Demonstration
July 29-Aug. 2

Salina, Kansas, July 29, 1918.

MOLINE PLOW CO. MOLINE, ILL. — DEMONSTRATION GROUND ATTEN: S.C.TURKENKOPH.

Dear Sir:--
We beg to report the following performance of a Moline Universal tractor 9-18 H.P. Serial No. 19002 Motor No. 10002 under test for draw bar horse power.
Conditions:-
Soil: Stubble ground- loose on top firm underneath.
Load: Plow, two fourteen inch plows.
Dynamometer : Hyatt Recording.
Draw Bar Pull: Average for one minute in maximum.
Time: Recorded by dynamometer.
Hitch: Horizontal - centered.

TEST NO.	GEAR	DRAW BAR PULL	SPEED MILES PER HOUR	DRAW BAR HORSE POWER	REMARKS
2A		2155#	2.18	12.5	Average
2B		2135#	3.52	20.05	plowing maximum

OBSERVERS: G. H. WOOLLEY JR., L. S. NEWMAN, J.B.DAVIDSON.
ENGINEERS IN CHARGE.
MANAGER OF DEMONSTRATION.

Develops 20 H.P. on the draw bar and we only rate it at 9 H.P. Think of it!-

Officially Accredited with 26.48 H.P. at the belt- We rate it at 18 H.P.

IN previous advertising we have stated that the Moline-Universal was conservatively rated at 9-18 h. p. Just how conservative is shown by the astonishing official tests made at the National Tractor Demonstration which showed the Moline-Universal to have an excess of over 11 h. p. on the draw bar and 8 h. p. at the belt.

Certainly these tests show beyond question of doubt the efficiency of the Moline-Universal. For each 169 lbs. of weight the Moline-Universal developed 1 h. p. on the draw bar. Compare this with the ordinary tractor which develops 1 h. p. for each 250 to 300 lbs. weight—and you will clearly realize the greater efficiency and corresponding greater economy of the Moline-Universal.

However, we shall continue to rote the Moline-Universal at 9-18 h. p. A troctor to give satisfoctory service and stand up for years under the strain of troctor work must have reserve power, and the greater the reserve the better. Under normal conditions the Moline-Universal has from 50 to 100 per cent reserve power. Think what this meons.

Ninety-eight per cent of its entire weight is on the two big drive wheels where every ounce is available for traction. The Moline-Universal is scientifically constructed and utilizes its weight to best advantage. It has no dead weight.

From the above report you will see that the Moline-Universal developed 20.05 h. p. at 3.52 m.p.h. pulling two plow bottoms 9 to 10 in. deep in exceptionally hard plowing. At 2.18 m.p.h. it developed 12.5 h. p. The difference in speed accounts for the extra draw bar pull. At 3.5 m. p. h. under average conditions the Moline-Universal will plow as much in a day as a 3-plow tractor traveling at 2.25 m.p.h.

Just the Right Size

If the Moline-Universal were built to pull a 3-bottom plow, it would be too heavy for light work. As the Moline-Universal is now built it has ample capacity for all ordinary plowing needs, and at the same time is equally suited for light operations such as cultivating, haying, harvesting, etc. which require far more work hours than your heavy work.

You are chiefly concerned in getting your work done quicker and better than you ever did before. You have no fixed power requirements. One day your work may be heavy, the next day light—and the light work is just as important as the heavy. Thus, you must have a tractor which will do both heavy and light work efficiently and economically, and the Moline-Universal fully meets both these requirements. You have plenty of power when you need it and when you don't want it you have no extra expense—as you would have with a heavy tractor for light jobs.

Remember this—here s what the Moline-Universal Tractor will do for you:

(1) Gives you plenty of power for oll your work, both heovy and light.

(2) It does all farm work including cultivating.

(3) One man operates both tractor and implement from the seot of the implement in oll operations.

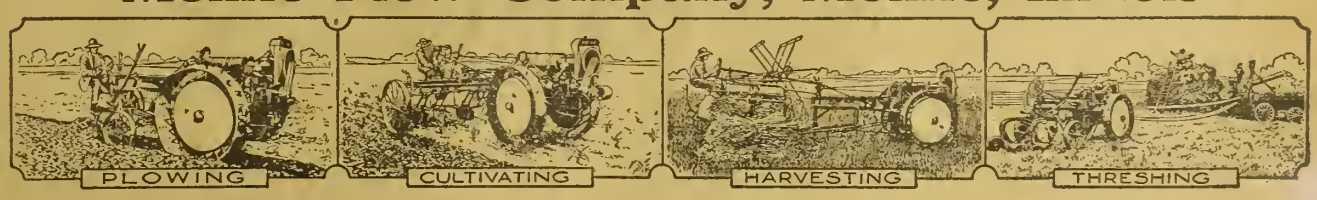
(4) Electric lights enable it to be worked nights to make up for unavoidable delays.

(5) Because of self-starter, non-robust lobor con operate tractor successfully.

(6) So well made and has so much reserve power thot it will give mony years of service.

Send for free catalog which gives detailed description of the Moline-Universal Tractor. Address Dept. 48.

Moline Plow Company, Moline, Illinois



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A BIG LAND OPENING
COWS, HOGS AND A BANK BOOK.
Your dream of life, of ease, comfort and independence await you at
BIRMINGHAM,
On Port Susan Bay, Snohomish County; 6000 acres of the best land that lies out doors; a 2 hours' ride from Seattle places your feet on the richest, most productive soil in the whole state of Washington; rail and water transportation; near paved roads, schools, churches, cannery and condensary; 3½ miles of waterfront and finest beach on Puget Sound; 20 miles of beautiful lake shore, surrounding 8 picturesque lakes; these lakes teem with trout. Get in on the first choice for $35 per acre and up; 10 yearly payments, 6 per cent interest.
This is but the beginning of the story of Birmingham. Send to the owners for illustrated literature. BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

For Sale or Exchange in Kern County, smooth valley land all tillable. Good soil, plenty of water, grows fruit, alfalfa, cotton, beans, etc. Electric power, good roads, good neighbors, fine climate, schools, church; 160 acre relinquishment near railroad town, $10 per acre. Some improvements including well. Would consider auto in good condition as part pay. Owner in draft. Address Owner, J. S., Care Cultivator.

20 acres deep silt land, joining good town on the South; 10 a. alfalfa, 10 a. grain; 300 feet to railroad station. Plenty of water for irrigating. Soft water piped on place. Price right. Chas. McNeely, Alpaugh, California.

For Sale or Trade in Apple Valley, Victorville, California, 80 acres set to apples and pears; 100 inches water. What have you? Address Box 131, Victorville, California.

For Sale—2½ acres good bearing oranges, house and barn. Fine location $4000. S. A. Kline, R. R. 1, Box 14, Ontario.

RABBITS

Go Into Business for Yourself — Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

For Sale—Rabbits. New Zealand Reds, extra large, fine color, none better, all young stock. $2.50 to $5.00. Order from this ad. Mrs. Emanual Smith, Etiwanda, California.

Money in Rabbits
Raise rabbits for us. Will pay $6.00 per pair. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

For Sale—New Zealand Red, Utility and pedigreed stock. Reasonable prices. Stephen E. Banneck, 330 E. North Hicks Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.

TREES

Jasmine Nurseries are now ready to sell or contract for next planting. Only nursery in Kern County raising full line of fruit trees. Stock 90 per cent fine including almonds, apricots, peaches, apples, pears, prunes, figs, olives, pomegranite. All purchases made within Kern County delivered by truck. Spengler & Rickert, Jasmine, Kern Co., California.

For Sale — Very fine Valencia trees, two year high buds; ¾ inch to 1¼ SOUR ROOT. Also yearlings, SWEET ROOT, ½-in. to ¾-in. all very thrifty, finest soil for balling. S. R. Coate, 564 So. Los Angeles St., Anahelm, California. Pacific 403 J.

For Sale — Seed Bed Stock, Orange and Lemon Trees, and Avocado Trees of all standard varieties. Walker - Hubbard Nursery Co., San Fernando, California.

5000 Fine Sour Orange seedlings two feet and over ready to bud which we will sell reasonable. Spengler & Rickert, Jasmine, Kern Co., California.

Citrus Trees — All kinds, any quantity. Butler's Morning Side Nursery, Lamanda Park, California.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

AGRICULTURAL IMPLEMENTS

IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches.
ARNOTT & COMPANY, INC.,
The Yellow Front. Established 1892.
112-118 S. Los Angeles St. Los Angeles.

GOATS

For Sale — 200 Angora Goats; will sell in quantities to suit. Good stock. Registered bucks. See stock at ranch at Devore. H. A. Clock, Devore, California.

Toggenburg Milch Goats — Rae P. Williams, Federal Realty Building, Oakland, California.

FOR LEASE

For Lease—7 acres damp land near El Monte, buildings fully equipped for dairying. Large hay barn near creamery and boulevard. Address R. D., Box 34, El Monte. Phone 31W.

To Lease—On shares. Large dairy and grain farm. Box 175, Tipton, Tulare Co., California.

MACHINERY

FOR SALE—USED MACHINERY.
Guaranteed to do same work as new.
WINDMILLS—8 ft., $32.50; 10 ft., $42.50; 12 ft., $65; 16 ft., $125 save half.
PUMPS — Bulldozer, 18-in. stroke, $95; double-acting Ames, $145; single Jack, 24-in. $55; 2½-in. rotary, $38; two-stage vertical B. J., $150; 7-in. vert. Krogh, $175; fine 6-in. horizontal, $125.
RANCH TOOLS — 1, 2, 3, 4 gang disc and moldboards; plows, spike tooth harrows, some new; Killefer cultivators; 4-horse power gear, $40; brand new John Deere alfalfa cultivator, cost $120, our price $85. New fanning mill hand or power, $39.
TANKS—New, used redwood and galv. tanks for less; 4500-gal. heavy galv. with top, $95; 6000-gal. galv., $120; 8000 heavy galv., $140; 25,000-gal. redwood, $135. DEMMITT CO., office 120 N. Main. Upstairs. Yards, 816 Yale. Also buy serviceable material.

REMANUFACTURED PIPE
All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.
WEISSBAUM PIPE WORKS,
169 Eleventh St., San Francisco.

For Sale, Holt Caterpillar Model 18. Has been entirely rebuilt by the Holt Mfg. Co. For information or demonstration phone owner, G. F. Blackwood, Glendora, or Holt Mfg. Co., Los Angeles. Might take good team as part payment but nothing else.

For Sale—On account of sale of all of our farming land, one 75 H. P. Holt Caterpillar tractor, in first class condition. THE PATTERSON RANCH COMPANY, OXNARD, CALIFORNIA.

Gasoline Engines, the largest stock of used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

For Sale—Holt 75 Caterpillar built last year. Fine condition; 2 heavy Holt 6 disc plows. Now working. J. A. Ream, Warner Springs, California.

WANTED

Wanted—Practical Farmer Manager.
Owners of an estate in the hills overlooking San Fernando Valley want a resident farmer—a man who can carry on development work, cultivate about 130 acres of irrigated plow land, including orchards, walnut groves and alfalfa, and can care for and build up a herd of pure bred Herefords on mountain pasture adjoining. Faces on paved state highway, near good schools, high school, etc. Abundant water, domestic and irrigation, under water. Will provide good modern farm house. This may be the chance to educate your children you have been looking for. Address, by letter only, giving full information as to your experience and qualifications. Advertising Manager, Security Trust and Savings Bank, Los Angeles, California.

Wanted: Experienced Rancher to take charge of and operate a fruit and alfalfa ranch at his expense and take all crops for a period of time and eventually get a certain interest in matured orchard. We furnish a well, machinery, stocked (80) eighty acre ranch, you operate it. Ranch has 40 acres in apples and pears, some cherries, peaches and plums, 10 acres alfalfa all fenced, 2 pumping plants, cement irrigating pipe, water tank, house, barn, 5 miles from Victorville. Trees, 2, 3 and 4 years old, apricot and peach trees bearing, chance of a life time for party with a little money, experience and ambition, this is a square deal and we will verify the above. Bueneman Ranch, 901 East 8th St., Los Angeles, California.

Wanted November 1st on modern dairy farm position as manager, cattle department, thoroughly experienced and efficient in every branch of cattle management, calf raising, A. R. work, life time experience, best reference. Only high class pure bred proposition considered. American family. Address H, Care Cultivator.

Wanted to Rent on shares. Alfalfa, dairy, Stock ranch with cows, horses, hogs, equipment. Understand scientific methords of ranching, stock raising. Must be a proposition where up-to-date methods can be used. Life time experience. J. E. Black, 1030 E. 51st., Los Angeles, California.

Poultryman desires change from present position. Thirteen year's practical poultry experience covering all its branches. Line breeding Standard fowls, exhibiting, egg farming with S. C. White Leghorns, etc. Address F. P., Box 47, R. F. D., Novato, California.

Herdsman Wanted—Single man preferred. Could use a married man with small family. M., care Cultivator.

Want to Hear From Owner of Farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

PIPE

Surface Irrigation Pipe
for sale; 10 foot lengths, 20 guage, 10 and 11 inch, new, at substantial reduction; have 7000 feet. Address Ramsey Probasco, 2436 Virginia Street, Berkeley, California.

"TESTED" and "GUARANTEED"
Screw pipe, casing, valves and fittings. Riveted slip joint pipe; all sizes. New and used. "Pacific" pipe for all purposes.
PACIFIC PIPE CO.,
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FERTILIZERS

Lime—Slaked. Corrects heavy sour soils quickly. H. B. Matthews, 495 Douglas St., Pasadena.

HOGS

BERKSHIRES GUERNSEYS
GRAPE WILD FARMS
A few fall boars left by Royal Superbus—also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
A. B. HUMPHREY,
Escalon, San Joaquin County, California.

Sale of Duroc-Jersey Hogs and Pigs — Some of the greatest brood sows and pigs of the breed. Young boars for herd headers Col. and Orion C. King breeding. Come and select. Prices reasonable. One of the greatest yearling boars anywhere about 900 pounds. Everything goes. All life immune from cholera. Garden City Sanatarium, San Jose.

Get a Golden Sunset Duroc—Jr. Yearling, Cherry King show boar, ready to drive before the judge. Sired by a twice grand champion. Cherry color—bone 9½ inch, height 35½ inch., length 66 inch, girth 64 inch. Priced to sell. Also Spring boars and gilts. O. M. Trotter, P. O. B. 524 Artesia, New Mexico.

Superba, World's Grand Champion Poland-China boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, California.

We Pay Cash for Hogs of All Sizes, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170. 3030 E. Vernon Ave., South 2712-J. Los Angeles.

Rancho Rubio Durocs—Thirty of the finest fall gilts we ever raised. Will begin breeding May 10. Write for prices and pedigrees. Some splendid weaned boar pigs for $25.00. Elmer Lamb, Ceres, California.

"Billiken" Chesters; Service Boars—if you are needing a boar this fall now is the time to buy. Few bred sows due to farrow in October. Open fall gilts; few weaned boar pigs. C. B. Cunningham, Mills, California.

Mule Foot Hogs, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California, "The Blue Gums."

For Sale — Poland-Chinas. Will book a few orders for extra quality gilts bred to my best herd boars for spring farrowing. Also a few good herd boars of serviceable age. Write to H. I. Marsh, Modesto, California.

For Sale — Registered Berkshire pigs sired by Lord Premier's Successor 11th. J. Pringle, at Oak Crest, Cahuenga Pass, R. D. 10, Box 864, Los Angeles. Holly. 14R3.

Wanted—To exchange a pure bred Tamworth boar weight about 550 pounds for pure bred Duroc or Chester White. Monte Vista Ranch, Spring Valley, California.

July Duroc-Jersey boar pigs, $25.00 each. Registered, delivered on board cars Lemon Cove, California. Guaranteed to please. C. L. Taylor, Three Rivers, California.

For Sale 2 Chester White boars 5-6 months. Best stock. Will sell for $35 each f. o. b. station if taken at once. Address R. D. 3, Box 243, Sacramento, California.

Castleview Berkshires are the typey, modern, quick-growing kind, choicest blood lines. Prices reasonable. Castleview Ranch, Berkshires exclusively, Santa Rosa.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

Poland-Chinas—A limited number sows, bred to our great boar Model Wonder, big type, straight and right. Dimmick Brothers, Lemoore, California.

Carruther's Farm Berkshire Hogs — Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition. Live Oak, California.

Duroc-Jerseys — We breed the champions. Peters, Lamson & Walker, Devore, San Bernardino County, California.

Greenwood Farm Durocs — "Size with Quality." H. C. Witherow, Palo Cedro, California.

HEWITT'S BIG TYPE POLAND-CHINA gilts and boar pigs. Hewitt & Hewitt, Dixon, California.

Registered Durocs of the big type—Cholera Immune. Derryfield Farm. Odd Fellows Building, Sacramento, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Orland, California.

REGISTERED BERKSHIRES. FAIR OAKS RANCH, WILLITS, CALIF.

BIG TYPE POLANDS
W. H. BROWNING, WOODLAND, CAL.

LIVE STOCK

For Sale — Two Belgian horses, 4 years old; 1700 weight, well broken. Case Tractor, 9 horse power, virtually new; mould-board plow. Inquire K. C. Henderson, Capitola, California.

For Sale—7 head of well broken Norman horses weighing from 1500 to 1700 pounds with harness complete at reasonable prices. Apply or write to L. M. Edwards, Wheatland, California

For Sale—Beautiful pure bred Belgian mare. Valuable and sure foal getter. For information apply to S. D., Rt. 1, Box 24, Buena Park.

ENGINES

Several New and Slightly Used Engines.
ARNOTT & CO., Implements, 112 S.
Los Angeles St., Los Angeles.

TURKEYS

Bronze Turkeys—Mammoth Bronze Toms and hens for sale. Place orders now before prices advance. Also Collie dogs for herding. John G. Mee, St. Helena.

CATTLE

Guernseys—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., California.

SHORTHORN CATTLE, SHROPSHIRE SHEEP. Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., California. W. P. Dwyer and W. S. Gullford, Owners.

For Sale—40 head of Holstein cows, some are registered the rest are choice grades; 17 milking others coming fresh. Ranch 5 miles south and 5 miles east Hanford. Wm. Harlan Smith, R. D. C, Box 181, Hanford, California. Phone 48F2.

For Sale—20 head first class Registered Jerseys, cows and heifers, the oldest being five years. Address Box 907, San Diego.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, California.

Registered Shorthorns (beef) calves and yearlings for sale. Both sexes, reds and roans. Choice goods breeding. Fair Oaks Ranch, Willits, California.

Ayrshires (registered) — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

Jersey Bulls and bull calves. Good individuals from producers. Write or come and select. N. H. Locke Co., Lockeford, California.

Elkhorn Farm Ayrshires—For sale young bulls of exceptional breeding and individuality. J. Henry Meyer, R. D. 2, Box 82, Watsonville, California.

For Sale — Polled Herefords; cows with sucking calves and with calf; and yearling bulls. Gay Owen, Calipatria, Imperial County, California.

Sunshine Farm Jerseys — Young bull, ready for light service, for sale. E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

For Sale or will trade for grade heifers, 2 young registered Holstein bulls. Pontiac breeding. F. W. Bowdle, Hawthorne.

REGISTERED JERSEYS FOR SALE.
J. R. CARHART, FULLERTON, CAL.

POULTRY

Fall Chicks For Sale—400,000 S. C. White Leghorn chicks from free range Hoganized stock only, for delivery from July to December, at very reasonable prices. Fall chicks are most profitable—broilers in ten weeks, pullets lay at five months. We guarantee safe delivery of all chicks to destination. Shipped safely anywhere West of the Rockies. No money in advance, pay on delivery. Special prices on 500 and 1000 lots. Finest hatchery in the world. Established over twenty years. Further information write Must Hatch Incubator Company, 424 Seventh Street, Petaluma, California.

Feed High; Eggs, Meat Higher! Our 200-290 egg Leghorns, Anconas, Reds, Rocks, Wyandottes, Minorcas, ducks are more profitable now, clearing $5.00. Some greatest government trapnested hens, 280-283. Hundreds breeders, laying, younger pullets; thousands chicks weekly; reasonable, fine males $1.00 up, worth treble. James Beeson, Pasadena, California.

White Leghorn Baby Chicks—Put in a lot of baby chicks this fall. Help out the food situation. Make some money, buy some Liberty Bonds, give the hatchery man a chance to buy some bonds also. We guarantee our chicks to be first class. Lyon Hatchery, Gardena, one-quarter mile east of harbor boulevard on Palm Avenue.

White Leghorn Baby Chix from heavy laying (Hoganized) stock. $14.00 per 100. We guarantee safe arrival. The Pioneer Hatchery, 409 Sixth St., Petaluma, California.

Chix—Barred Rocks, R. I. Reds, Orpingtons, Anconas, Minorcas, Buff, White and Brown Leghorns. Breeding Cockerels. Enoch Crews, Seabright, California.

"Eastman's Bred - To - Lay" Hoganized and trapnested Barred Plymouth Rocks. Fall chicks, eggs, cockerels. Fairmead Poultry Farm, Fairmead, California.

Black Orpingtons Lay, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, Cal.

MISCELLANEOUS

For Sale — $2500.00 buys a 30x100 foot greenhouse, latest type; top and side ventilators, heavy redwood benches; also large lath houses; hot bed sash; acre of fine soil. Situated in thriving town of thirty thousand inhabitants. Excellent market. Expenses light, very little fuel required. Sale terms to suit or will lease. TUCSON SEED & FLORAL CO., Tucson, Arizona.

100 Printed Envelopes 50c. Send the wording you want printed together with your order and envelopes will be mailed prepaid, also a full line of letterhead samples. Frank E. Brown, 1377 Palm Terrace, Pasadena, California.

For Sale—L. A. Auto Tractor attachment almost new, $200 save $125. Leaving farm, also centrifugal pump, only $16 cost $47 new; 100 pounds clean, very best alfalfa seed recleaned, 18c pound and 50 pounds Peruvian, 28c pound. K. Warmuth, 422 West 45th St., Los Angeles.

To Reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco

LUMBER

Lumber-Sash-Doors-Plumbing - Supplies —Building materials of all kinds. New and second hand "A"R.W. shingles 60c per bundle. Send list for estimates. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco.

SEEDS AND PLANTS

Early Amber Sorghum makes the best silage and produces the greatest tonnage per acre. Recleaned seed 9c per pound f. o. b. Stockton. Fancy recleaned Sudan seed at 18c per pound f. o. b. Stockton, in lots to suit. Aurora Seed Mill, 48 N. Aurora St., Stockton, California.

Seed Grain — We can make attractive prices on seed wheat and Winter or Gray oats and other field seeds. Have a full line of nursery stock. Supply of seed grain will be limited. Write now. 28 years in business. Carlton Nurseries, Carlton, Oregon.

50,000 Yellow Calla Elliottiana Bulbs. William Richard, 438 River St., Santa Cruz, California.

Peruvian and Common Alfalfa Seed—Specialty. Write for prices and sample. Box 501. Fowler, California.

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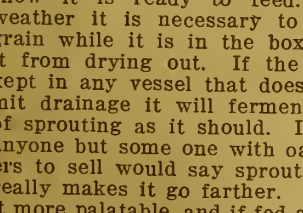
CITRUS TREES
Orange, Lemon, Pomelo and Lime, bud selected (pedigreed) trees, subject to immediate delivery. Correspondence invited and prices cheerfully quoted.
Founded in 1889
R. M. Teague Citrus Nurseries
SAN DIMAS, CALIFORNIA



$35 to $165
2 and 4-wheeled
AUTO WRECKERS
1450 Central Ave, Los Angeles

Queries

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Sprouted Grain

I would like very much some information on the method of sprouting grain for chickens. As we have it, the chickens are getting lame or have some affection of the back whereby they sit down when eating and while eating ravenously. There are more and more of them getting the same trouble. A good many of the young chickens are affected, and I feel that it is the feed, as we never had this trouble before. We have been soaking a sack of barley at a time and by the time it is gone the bottom of it is very sour. — Subscriber, San Luis Obispo.

It may be merely greediness, or perhaps real hunger that makes your chickens sit down to eat. If that is the only symptom of disease I should not worry. But your chickens will certainly be very ill sooner or later if they eat fermented barley. The proper way to sprout barley or oats is to soak it 24 to 36 hours and then let it stand and drain another 24 hours in a shallow box that has sufficient opening in the bottom to let all the water run out. I soak a pail full each day for 25 hens, but this is rather more than they will eat. After the grain has soaked I turn it out into a lug box (the kind used for potatoes) which is quite sure to have cracks in the bottom, and cover with a burlap sack. As soon as the white roots begin to show it is ready to feed. In hot weather it is necessary to wet the grain while it is in the box to keep it from drying out. If the grain is kept in any vessel that does not permit drainage it will ferment instead of sprouting as it should. I doubt if anyone but some one with oat sprouters to sell would say sprouting grain really makes it go farther. It makes it more palatable, and if fed at exactly the right time, more digestible, and it also gives it some value as green feed, but it does not add any nourishment, and I doubt if you will find a sack of barley lasts any longer when it is sprouted than when it is fed dry. On the other hand, I suspect the hens will eat it up faster if they are given all they will eat.

But sprouted grain does not take the place of hard, whole grain. The hens must have enough of the latter to keep their digestion in order. Why not feed some milo at night, letting them have the sprouted barley in the morning or at noon? As your hens have range and fresh alfalfa I should think it would hardly be necessary to sprout their barley and I should certainly not sprout all of it if I could not give them some hard grain beside. —J. A. K.

Scaly Legs

Please tell me what to do for chickens with scaly legs and for the depluming mite.—Subscriber, Los Angeles.

Lard and sulphur, rubbed well into the shanks, is as satisfactory a remedy as there is for scaly leg. If you prefer you may use coal tar, dipping the shanks into it and letting it dry on. Another remedy, particularly good when many birds are to be treated, is a mixture of one part kerosene and two parts raw linseed oil. Go to the roost at night and dip both legs of each affected bird in a quart measure of the mixture, holding them in a minute and allowing them to drip before replacing the bird on the roost.

In general, any remedy which will kill the mite which causes scaly leg will also kill the depluming mite, but you cannot dip the head of the bird as you can its legs, and kerosene is a remedy which must be used with care, for it burns if put on too strong. Lard and sulphur, oil of caraway mixed with vaseline (one part oil of caraway to five parts vaseline) may be used for the depluming mite, and the following is also recommended: One dram flowers of sulphur; 20 grains carbonate of potash; one-half ounce lard or vaseline. Rub on the affected parts every four or five days.—J. A. K.

Treating Roupy Turks

What would you advise for cold or swelled head in turkeys? They have had it for a long time.—Subscriber, San Luis Obispo.

Try dipping the heads of the roupy turkeys in a lard pail of warmish water which has been colored purple with potassium permanganate crystals. Do this morning and night, holding the head under as long as you dare. This will clean out the nasal passages, and if the birds are roosting out of doors they ought to get over the trouble quickly. When turkeys that sleep out have persistent roupy symptoms one may usually conclude they have an inherited tendency to the disease. Turkeys that are kept in after they are past their infancy cannot be expected to be healthy.—J. A. K.

Fattening Turkeys

I have 38 turkeys that weigh from 6 to 14 pounds each and have all the alfalfa pasture they want, very few bugs or grain. What should I feed and how much to fatten them by Thanksgiving? All I have fed has been sour milk and bran at night. Will cornmeal hurt them? Will ground oats that have become a little rancid from age hurt them? They were hatched in March.—Subscriber, Lakeside.

Now is the time to begin feeding corn, not much at once, but gradually, just a little this week—a little more next week. Do not drop off the ration they have been accustomed to, but add the corn. Whole corn is considered best for fattening turkeys. If you have not whole corn, cracked will answer. If you have not Indian corn, use milo or Gyp corn, but do not feed oats of any kind, least of all rancid oats. You will surely have sick turkeys if you do. Let them have all the sour milk and alfalfa they will eat, but gradually discontinue the bran until, by two weeks before they are to be marketed they have no grain but corn.—J. A. K.

The Palo Verde Valley, in common with every other producing section of the state, is having difficulty in securing sufficient help to harvest her great crop of cotton. The valley estimates that there is need for at least 1000 more pickers. The picking season will last until February.

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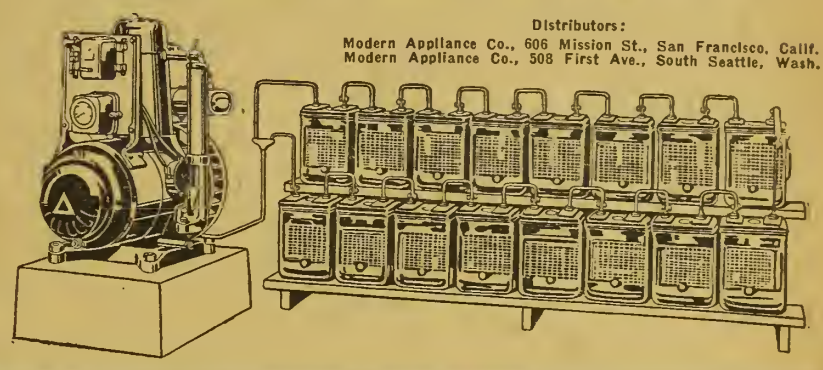

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Owing to difficulty in obtaining raw materials and labor, and the rising costs of both, piano manufacturers raised their prices to us several times in the past year and a half—we were forced to raise our prices accordingly. The manufacturers now warn us that, as their production has been cut down by the War Industries Board to a small fraction of their original output, they cannot manufacture pianos on a quantity basis and sell at a quantity price—that the prices of the small number of pianos they will be permitted to make will soon increase enormously.

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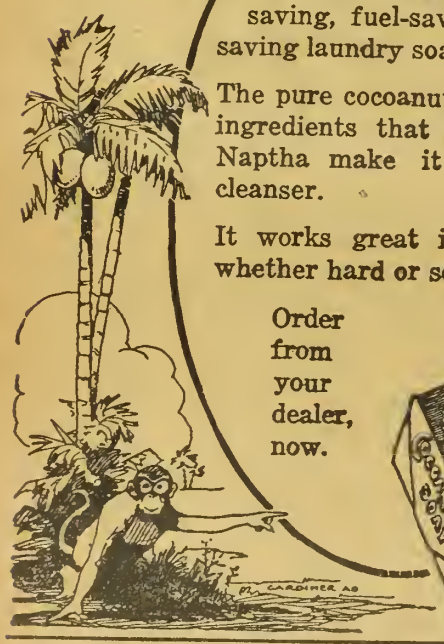

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Household Department

GIVING

Just money! That is all we're asked to give.
He gave his life, Jim. He'd have liked to live,
For Betty—bless her shy young heart—had only
The week before he left, put on his ring.
How long her life will be to her, how lonely
With nothing of him but remembering!
She never flinched, nor he, my son, they gave;
She working still, and Jimmie in his grave.

And now today we're asked again to save,
And give, give, give the country what we've sweat
And toiled to earn. It's hard for all—and yet,
We safe, we calm, we fortunate, we living,
I wonder, dare we, dare we call this giving?

—Mary Carolyn Davies.

HILLSBORO'S "BIT"

By Ernest Elwood Stanford in Youth's Companion

A TOURIST stopped at my shop yesterday for some repairs on his automobile. He was a big, pussy chap; loud voice, louder clothes and a New York number on his car. He got to talking about the war.

"It's certainly a relief to get back here in the hills away from it all," he says. "I don't suppose, Mr. Orramel Jones, that you realize your isolation enough to appreciate it. Even the daily papers hardly bother you here. I suppose you've hardly heard that the country is at war."

"We've heard rumors," says I.

And then I began to bang on a cold iron so I wouldn't have to hear how the draft had taken all his best clerks, and how the Liberty Loans and war taxes had knocked the bottom out of the stock market.

—

The day war was declared, little Doc Seagraves—he that married my daughter Miriam—burst into the shop, and I knew by the look on his face what he'd come for.

"They'll need doctors in the army," says he.

Before I could say a word my boy, Al, came round the corner. I thought he was in the electric works at Northville, 20 miles away.

"They'll need engineers in the army," says he.

Al had worked with me quite a spell after he finished high school, and he had the makings of a mighty good blacksmith. Then he got the education bug and went and worked his way through an engineering college. Made good, too, after he went into the electric works. He'd only been married a year and a half—Amy Fuller, she was, Deacon Barlow's niece—and they'd got a three-months-old baby, the cutest little feller, little Allen Orramel Jones!

I laid down my hammer and leaned back against the old anvil, for the two at once sort of took away my breath—not that I'd expected anything else.

"Yes," says I. "And wives'll need husbands and children'll need fathers."

Little Doc turned a shade whiter—he's not ruddy, anyway. There's two little Seagraveses—the oldest, four.

"Yes," says he. "Husbands and fathers to make the world safe for them to live in."

"Perhaps," says I.

And we didn't say anything more for quite a spell.

"There's a duty a man owes his family, and a duty he owes his country," says I, at last. "Everyone's got to decide for himself which comes first, or whether they both come together. You boys talk it over with your wives; and if you still think it's laid upon you, why, all you can do is go. As for the girls and the children, I've raised one family, and I guess I can look out for a couple more."

But I wasn't expecting what I got that night. After supper I was sitting in my stocking feet trying to read the paper while mother'd gone over to Miriam's. I didn't even hear the door open, but there stood Tommy—little Tommy, that was in school over to Northville, finishing up his last year.

"Dad, can I go?" says he.

I took my feet off the chair and looked up at him, and he looked back at me, square in the eye, where a man should look—little Tommy, eighteen years old now, straight as an arrow and broad as a door and near a foot taller'n I ever was, but little Tommy just the same.

"Tommy," says I, at last, "it's a lot you're asking. Allen and Phil are going."

Tommy said never a word—just kept looking straight back at me, and I could see there in his eye the grit that's made this nation what it is, and the cleanness of young manhood, with the fire of youth that lights a man to usefulness and heaven if it's burnt right and ruin and hell if it's not.

"Tommy," says I, "you're a young boy yet, and a brave one, I don't doubt. But there's boys as clean as you, not afraid of the fire of this world or the next, that'll come back from this war, or even the training camps, worthless to the country they swore to serve, a curse to the sorrowing women that bore 'em, and a damning blight to the unlucky generations that'll follow 'em. I reckon you get my meaning. I don't doubt you've got

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Save Sugar, Children!

A Penny here means a Burn "Over there"

the right kind of grit that'll send you with the rest of the boys over the top. Have you got that which'll turn you away from the rest, when the crowd points their fingers and laughs, and your soul's in peril? You've never been tempted, Tommy. Can you come back, if God lets you come back, able to look your mother in the eye as you do now?"

"I can," says Tommy; and his voice was low and solemn, like a deep church bell over a distant hill.

"Then if she says it's all right, it's all right," says I.

And I got up and walked off outdoors somewhere. And I was glad it was dark.

So by and by we went to the train to see them off for the last time—the boys in their new uniforms stepping lively and straight, but looking a bit more solemn than usual; mother and the girls with their lips tight shut, but a bit blurry round the eyes—even Tommy—little rascal!—had a slip of a thing from Northville to wave after him; little Phil trotting along trying to keep step with his dad; the babies laughing and cooing in their carriages; and me—but I'm not saying anything about me. And we sent 'em away with what smiles we could, and we thought they were all heroes, and so they are, I hope. You don't have to hope that of the women that stay behind.

Then we went back home and tried to pick up things where we left 'em. Tried to.

'Twas a busy summer. And yet it was a quiet one. Little Doc and Allen and Tommy had had plenty of company when they'd marched away. The little boys killed Germans in the schoolyard while the G. A. R. did the same in Wilkins's store. The grass sprung round the quoit stake, and on Sunday the girls walked home from meeting alone or in silent little knots. Memorial Day we trimmed the cemetery as usual, but we didn't linger there.

It seemed for a while that there was mighty little for us that was left behind to do. Of course we took our little slice of the Liberty Loan and planted all the crops we could—not such a great sight, help being so scarce and most of us older than we wished we were. There was little enough risk in what we did, at that. Washy Perkyns, our local big bug, who had been training off flesh with dumb-bells and boxing gloves ever since the Lusitania went down, had hustled off to Plattsburg at the first call, and he sent back word he'd buy all we could raise at a good percentage above cost. He was good for it all right, but it made us feel sort of selfish.

About the last of planting time some one—I never did know who—suggested planting a big community garden for the Red Cross. The notion took big. Washy Perkyns—he'll be running Hillsboro yet by cable from France—lent us a piece of the best farm land in town, and we ploughed it and harrowed it and fertilized it and planted it in company and let our own work go. Fifty rods long and thirty wide it was; smooth, rolling land sloping west. 'Twas no small chore for us, circumstances considered. We made three strips of it: potatoes and beans and corn, each ten rods wide. Some said it was time wasted to plant that late corn, but we did it just the same.

(Continued next week.)

Cold, unduly reserved natures should remember that, though flowers may be found beneath the snow, it is chilly work to dig for them, and few care to take the trouble. — Maeterlinck.

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Los Angeles Market

Los Angeles, October 2, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.

Cal. Extra Creamery 58

Sept.	25	26	27	28	30	Oct.1
'18 ...	58	58	58	58	58	58

Rcts. wk. ending Oct. 1, 196,300 lbs.

CHEESE

Brokers' prices:

California fresh, lb. 29

EGGS

Exchange quotations. Price to retailers 2 to 3 cents higher.

Fresh extras 60
Case Count 54
Pullets 50

Dairy Exchange prices past week on fresh extras.

Sept.	25	26	27	28	30	Oct.1
'18 ...	57½	58	58½	59½	60	60

Rcts. wk. ending Oct. 1, 379 cases.

POULTRY

We quote to producers.

Broilers 35
Fryers 31
Hens, small, 26; heavy .....26@29
Colored 31
Ducks, lb., 20; ducklings .....22@25
Roasters 31
Roosters, old 20
Turkeys .....30@35
Geese 15
Belgian Hares 16
Squabs .....30@35

LIVESTOCK

We quote cwt. f. o. b. L. A.
Corrected Wednesday morning, October 2, by the Cudahy Company.

Cattle—
Beef steers, av. 1000-1100 lbs.....12.00
Heifers, good 9.00
Cows, good 8.50
Veal Calves 10.00
Canners .....5.00@6.00

Hogs—
Av. 150 lbs. 17.00
Av. 175-225 lbs. 18.00
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers 11.50
Ewes 10.50
Lambs 15.50
Yearlings .....11.50@12.00

POTATOES

Wholesale selling prides:

Burbanks .....2.85@3.25
Sweet, lug .....85@95
Idaho Russet .....3.05@3.10
White Rose, lug .....1.00@1.10

ONIONS

Wholesale selling price, cwt.
Australian Brown, cwt. .....2.10@2.25
White Globe .....2.15@2.25

VEGETABLES

Wholesale prices:
Beans—String 6
Limas, lb. 5
Beets, sk. 2.00
Cabbage, cr. .....2.50@3.00
Carrots, doz. 40
Cauliflower, doz. 1.50
Celery, cr. .....3.00@3.50
Corn, lug. .....75@90
Cucumbers, lug .....60@65
Egg Plant, lb. .....3@3½
Horseradish, lb. 15
Lettuce, cr. .....90@1.00
Onions, green, doz. .....25@30
Peas, Tel., lb. .....13@14
Peppers, Chili, bx., 40; Bell, lug 40
Tomatoes, lug .....80@90
Turnips, doz. 40
Watercress, doz. .....35@40

FRUITS

Wholesale prices:
Apples—King David .....1.85@2.10
Bellefleurs, bx. .....1.50@1.60
Newton Pippins .....1.35@1.65
Cantaloupes — Jumbo packed, Tip Tops, best, 1.00@1.25; Paul Rose, 1.25; cabbage crates, Tip Tops and Pineapples, 3.00; White Rinds, 3.00@3.25; Casabas, 3.25@3.50.
Crabapples, lug. .....1.35@1.40
Figs, lb. .....5@6
Grapes—Home-grown, best, lb., Malagas, 3@4; Muscats, 3@3½; Tokays, 4@5; Cornichons, 4; Black Morocco, 4; Red Emperors, 4@5; four-basket crates, best Concords, 1.40@1.50.
Nectarines, lb. .....5@6
Peaches—Salways, 1.00@1.15; Strawberry Clings, small, 1.00@1.25; Henrietta, 1.30@1.40 lug box; Northern Salways, fy., 1.50@1.65 lug box.
Pears—Bartletts, bx. 2.75
Quinces, lb. .....3@3½
Watermelons, lb. .....¾@1½

CITRUS

Lemons, packed, 3.00@3.25; loose 2.25@2.75
Oranges — Valencias .....7.75@8.50
Grapefruit .....4.50@6.00

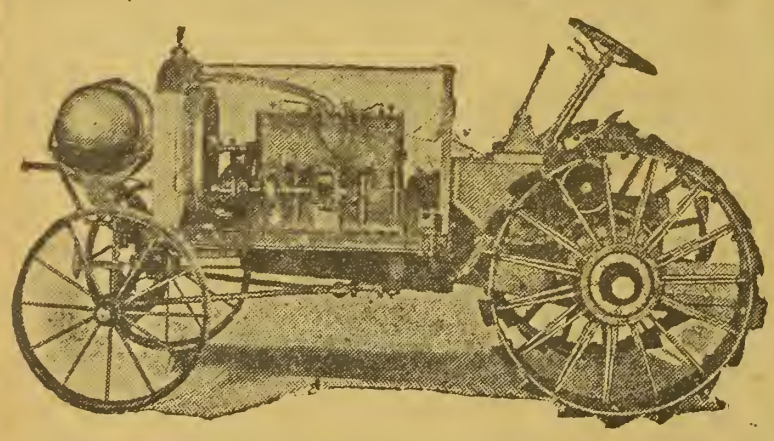
HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....18@20
Amber extracted 16
Fancy white comb, per case.....6.50
Comb Lt., amber, per case .....5.00@6.00
Beeswax, lb. .....32@34

BEANS

Price to retallers, cwt.:
Lady Washington 11.25
Navy 11.25
Pink 8.25
Tepary 8.00
Red Mex. 9.00
Lima 12.75
Blackeyes 7.75
Garbanzos 11.00
Soy 8.00
Lentils 21.00
Kidney 12.00
Henderson Bush Lima 10.50

BEARCAT



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One and one-half miles on low, 2½ to 3½ miles plow speed; 6 miles on the road. DIXEY magneto, with impulse starter. It is a 2-3 plow machine, with power to spare all the time—10 H. P. on the drawbar and 20 H. P. on the belt pulley, and it is positively different from all other Tractors; is built for every day hard work, with a minimum cost of upkeep.

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Aviation, Horse Races, Sports

Plan to Remain Several Days

HAY

Quotations by Nichols-Loomis Company. Prices to growers f. o. b. L. A.:
Tame Oat .....25.00@27.00
Volunteer Oat .....12.00@14.00
Wheat..... .....22.00@25.00
Barley .....22.00@25.00
Alfalfa .....18.00@21.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS

See San Francisco market.

San Francisco Markets

San Francisco, October 1, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapped, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:
Extras 65
Prime firsts 56

Prices Extras past week and year ago:

Sept.	24	25	26	27	28	30
'17 ...	44	44½	44½	..	44½	..

Rcts. wk. ending Sept. 30, 349,800 lbs.

CHEESE

Dairy Exchange quotations:
Cal. Flats .....28½@30
Cal. Y. Am. 31
Cheddar 30½
Ore. Y. Am. 30½
Jack Cheese, full cream 28

EGGS

Dairy Exchange quotations:
Extras 65½
Selected Pullets 56

Prices Extras past week and year ago:

Sept.	24	25	26	27	28	30
'18 ...	61½	63	64½	64½	65½	65½
'17 ...	47½	47½	48	..	46½	..

Rcts. wk. ending Sept. 30, 16,187 cases.

POULTRY

We quote to producers, lb.:

Per lb.: Large hens, 35@36; Leghorn hens, 29@31; broilers and fryers, ¾ to 1½ lbs., 45@50; 1½ to 2 lbs., 36@38; 3 lbs. and over, 35@36; old roosters, 22@23.

Ducks, live, 27@30.
Geese, 23@24.
Belgian hares, live, 15-17.
Squabs, doz., 3.50@4.00.
Turkeys, live, 33@36.

LIVESTOCK

Prices gross weight:

Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.

Steers, lb., 10@12; thin, 8@9; cows and heifers, 6½@8; thin, 4@5; calves, 6@11.

Sheep—Lb. gross weight: Wethers, 11½@12; ewes, 9@9½; lambs, yearlings, 12@12½; milk, 14@14½

Hogs—Hard grain fed, weighing 100 to 140 lbs., 18; 140 to 300 lbs., 18½; 300 to 400 lbs., 18.

POTATOES

Wholesale selling prices at wharf, cwt.:
River, new, cwt. .....2.00@2.50
Mendeville .....2.50@2.75
Sweets, lb. .....4@4½

ONIONS

Wholesale selling price on wharf, cwt.:
Australian, Brown and Yellow..1.25@1.50
Wax .....1.75@2.00
Garlic, new, lb. .....12½@15

VEGETABLES

Wholesale selling price:
Artichokes, doz. .....40@70
Beans, String, lb. .....6@8
Limas, lb. .....6@8
Carrots, sk. .....75@85
Corn, green, sk. .....1.50@3.00
Celery, doz. .....30@50
Cucumbers, lug .....75@85
Pickling, lb. .....3@4½
Egg Plant, lug .....1.00@1.25
Lettuce .....1.00@1.25
Okra, bx. 50
Onions, green, bx. .....65@75
Peas, lb. .....12@14
Peppers, Bell, lug, 50@1.00; Chili..50@65
Rhubarb, bx. .....1.00@1.25
Squash — Summer, lug .....75@1.00
Cream .....75@85
Tomatoes, lug. .....75@1.25
Pumpkins, sk. .....85@90

FRESH FRUITS

Apples — Gravenstein .....1.25@2.50
Bellefleur .....1.50@2.00
Jonathan .....1.75@2.50
Bananas, lb. .....7@7½
Berries—Ch.: Strawberries, 9.00@11.00; raspberries, 8.00@10.00; blackberries, 7.00@9.00; huckleberries, lb., 12½@16.
Cantaloupes — Turlock ponies and Standards, 1.00@2.00; Honey Dew, 1.25@1.50.
Figs, single .....50@75
Honey Dew Melons, cr. .....1.50@1.75
Grapes—Cr.: Isabella, Cornichon, 1.00@1.25; Malaga and Black, 75@1.00; Seedless, 1.50@1.65; lug., 1.25@1.50; fy., Muscat, 1.50@1.75.
Nectarines, cr. .....50@1.00
Peaches, bx. .....75@1.00
Pears, Bartlett, wrapped bx.....1.75@3.25
Plums, cr. .....1.25@1.50
Persimmons, bx. .....1.25@1.50
Pomegranates, small lug .....75@1.25
Pineapples, doz. .....4.50@5.00
Quinces, lug .....1.00@1.25
Watermelons, lb. .....1¼@1½

CITRUS

Lemons, bx., fy., 2.50@5.00; lemonettes, 2.00@3.50; oranges, 7.50@8.50; grapefruit, 5.50@6.50.

DRIED FRUITS

Raisins: Associated prices 1918 are:
Muscats: Packages seeded, fancy, 36-16s, 9.625; fancy, 48-12s, 7.75; choice, 36-16s, 9.125; choice, 48-12s, 7.375. Bulk seeded: 25-lb. Bakers, 8.00; 25-lb. fancy, 8.85.

Thompson Seedless; packages recleaned, 48-16s to case, 9.90; bulk, recleaned, 36-12s to case, 8.00; package, recleaned, 25-lb. boxes, 9.25. Sulphur bleached — northern stock: Bulk, 25-lb. boxes, choice, 10¼; bulk, 25-lb. boxes, fancy, 10¾; bulk, 25-lb. boxes, extra fancy, 11¼. Soda dipped — northern stock — Bulk, 25-lb. boxes, 10.

Loose: 1-crown, 25 lb. boxes, 8½; 2-crown, 25 lb. boxes, 7½; 3-crown, 25 lb. boxes, 8; 4-crown, 25 lb. boxes, 8¾.

Layers: 3-crown, 20 lb. boxes, 1.85; 3-crown, 20 1-lb. trays to box, 2.00; 4-crown, 20 lb. boxes, 2.10; 6-crown, 20 lb. boxes, 2.95; 3-crown, 10 lb. boxes, 1.05; 4-crown, 10 lb. boxes, 1.20; 6-crown, 10 lb. boxes, 1.65; 3-crown, 5 lb. boxes, .65; 4-crown, 5 lb. boxes, .70; 6-crown, 5 lb. boxes, .90.

Sun-Maid clusters, 20 1-lb. cartons to box, 2.35.

Imperials, 4 5-lb. cartons to box, 3.40.

Vineyard run, 50 lb. boxes, 3.90; 100 lb. boxes, 7.50.

Sultanas. Packages, recleaned, 48-16s to case, 9.65; bulk, recleaned, 25-lb. boxes, 9.00.

Peaches — California Peach Growers quotes opening prices for 1918 crop f. o. b. factories California. Prices guaranteed to December 31.

Bulk basis and boxes unfaced 1 and 2 cents more.

	Practically Peeled	Yellows (Old style)	Muirs (Old style)
Standard	12⅞c	11¼c	11⅝c
Choice	13⅜c	11⅝c	11⅞c
Fancy	14⅜c	12½c	12⅝c
Ex. Fancy	15½c	13¼c	14c
Slabs		10¼c	

Prunes and Apricots. The Prune and Apricot Growers' Association have named following prices on apricots:

Standards 9½
Choice 13
Extra Choice 14½
Fancy 16
Extra Fancy 17½
Extra Moorparks 19
Slabs 11

Cash on delivery price on all grades will be 8 cents with the exception of standards and slabs on which it will be 6 cents.

Prunes: The government will take all the 50-60; 60-70; 70-80 sizes. The quotations sent to the trade last night are as follows:

The bulk prices will be:

Sizes:	Price per lb.
20-30	17
30-40	10¾
40-50	10
50-60	9
60-70	9
70-80	8¾
80-90	8¼
90-100	7¾
100-120	4¾
Above 120	4¼

One cent per pound, and one and one-fourth cents per pound will be added for 50 and 25-lb. boxes.

NUTS

The Almond Growers' Association has established opening prices as follows per pound:
Nonp. 27½
I.X.L. 25½
Ne Plus 24½
Drake 20

Outside dealers have named prices above these quotations and it is understood association stock is practically closed out and prices withdrawn.

Walnuts: Net prices have been named by the California Walnut Growers Association:
No. 1 Softshell 28
No. 2 Softshell 25
Jumbo 30
Fancy Budded 31½
Golden Gate Budded 29

Franquettes, Eurekas and other fancy varieties sold on sample. No. 1 Softshell guaranteed 88 per cent good; Fancy Budded, 90 per cent. In case of worms or damage by ants not more than five per cent.

BEANS

Jobbers' prices, cwt., recleaned:
Limas .....12.90@13.10
Bayous .....7.50@7.75
Small Whites .....Nominal
Large Whites .....Nominal
Mexican Reds .....7.75@7.90
Blackeyes .....6.75@7.00
Pinks .....7.10@7.30
Red Kidney .....Nominal
Cranberry .....Nominal
Teparies .....7.50@8.00

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....17@20
Amber extracted 16
White comb, cs. .....4.50@6.00
Light amber comb, cs. .....3.50@4.00
Beeswax .....32@34

Citrus Fruit Market

Los Angeles, October 2, 1918.

Last week's rains forced the slowing up of shipments and the market has been stiffened, more than counteracting a slight easing off which has been felt. New crop Jamaicas are coming into New York and Florida is shipping in some of her Parson Browns. Auction markets have shown some sales as high as $10 and $10.50.

Lemons are stiffening slightly.

Shipments

Shipments of citrus fruits to date since November 1, 1917: Southern California; oranges 13,870 cars, lemons 5571, total 19,441. To same date last season, oranges 38,773, lemons 7519, total 46,292. Central California this season; oranges 2536, lemons 115, total 2651. Last season to same date; oranges 4665, lemons 164, total 4829. Northern California; oranges 203, last year same date 845.

Feeding Problems

Written for California Cultivator By Jean A. Koethen

AS WE enter the fifth year of the Great War, it will be well for all of us, individually and collectively, to stop and consider just where, to use a phrase so apt that it can hardly be called slang, we are "at." The two problems we have had to face for four years are the problems of cutting down expense and of increasing production. We have learned how to cull out the slackers and how to breed for increased production till we can almost make two eggs grow where one grew before. We have learned to do without wheat and corn and middlings and ground oats. We have learned to make our hens work for what they get and not to pay them too-well. And still we are only at the beginning. The question of feeding, like Banquo's ghost, still walks abroad and will not rest.

There is little new to be said about the feed itself. Some sort of balanced ration must be used. There must be some hard grain, some ground grain, some animal feed and a great deal of green feed. Experiments at the University Farm have shown that the amount of hard grain, which is more expensive than ground grain, may be reduced beyond what we had thought possible, without affecting either health or production. I believe the proportion last announced is about 60 per cent ground grain by weight to 40 per cent hard grain. We used to think there must be more than half hard grain. It must be remembered that if only the manufacture of eggs were to be considered we might use all ground grain, but that some hard grain is absolutely indispensable to the health of the birds. The muscles of the gizzard must have some work or they grow relaxed and weak and the whole system suffers. Just how much hard grain the hen must have to maintain health is still a question, but there must be some.

How far green feed can be made to take the place of grain is also a question we have not settled. Edward Brown stated that some English feeders are making greens half the ration and that egg production does not suffer in the least. If this is true, it is tremendously important. In this climate to raise enough vegetables and succulent greens for half the ration of 2000 hens would demand more land than many commercial poultrymen have at their disposal, and yet it may be necessary. Fortunately, there is plenty of idle land, much of it under water, and the rest suited for dry farming. We can at least plant vacant nearby lots to barley or oats or wheat. A neighbor of mine planted several lots to wheat last October. The grain did not sprout till the February rains gave it a start, but in the end he harvested a good crop, enough to help out considerably with his chickens. He says the secret of success with wheat is to get it in early, so that it will get the benefit of every bit of rain that falls.

Quite as important as the feed that is given is the method of feeding. A good feeder is one who has studied his own individual problems and mastered them. He may feed a moist mash or not, may mix his dry mash ingredients or feed them separately in hoppers, may feed his hard grain with an automatic feeder or in deep litter—all these are mere details. The good feeder works out a system, and then works it. If he feeds a moist mash he does so for reasons of his own, and not because some one says he should. If he cuts down hard grain and lets the hens fill their crops with soft feed he does this because he has worked out for himself a proportion that produces satisfactory results. He does not try every formula he sees in the columns of the poultry press, neither does he stick stubbornly to his own way. He is open minded, ready to try anything which promises results, but not ready to let go what has given him results until he has found something better.

Chickens like a variety but do not like sudden changes. Hence it is best always to make changes gradually. The good feeder does not drop an ingredient suddenly from his mash unless he is forced to do so. Even more careful is he about adding new ingredients, especially if they are not the regular ground grains. Alfalfa meal, when the hens are not accustomed to it, must sometimes be treated in this way, only a very small amount being given at the start. The good feeder studies his hens' idiosyncrasies. If he finds them leaving the hulls of steamed rolled barley or picking out certain grains from the scratch mixture and leaving others he modifies his ration as far as he may to suit the taste of the birds.

Chickens can be trained to almost any reasonable ration, but they dislike new things, unless they are very hungry or the new things very appetizing. Take stale bread, for example. This is one of the most wholesome feeds if it is not moldy, but chickens do not care for it dry, and even when it is soaked they are not eager for it if they have not been used to it. Soaked and mixed in the moist mash it finds instant acceptance. The good feeder takes care that there are no empty crops because of new feeds. Almost any new thing can be disguised by mixture with others which are familiar.

After all, it simmers down to this: use what you have and make the best of it. We are on short commons these days, but a litle extra care in preparing and feeding the ration, a little greater punctuality, more painstaking regularity, study of the individual fowl and elimination of discomfort, with the greatest possible use of green feed, will help us a good way along the road to economical feeding.

INCREASED EGG CONSUMPTION

Reports on the nation's egg supplies lately received by the United States food administration show that the number of eggs in storage in the United States on July 1 was practi cally the same as on July 1, 1917. With this condition, it is interesting to note that consumption had increased about 17 per cent, indicating that production must also have increased in about the same degree. Imports and exports are a negligible factor compared with the enormous size of the egg trade within the United States.

The poultryman who looks ahead is the one that does things. His plans for the future are laid, and he works as closely to them as it is possible.

Every fixture in the house should be movable. This will make it easier to fight lice.

Grit will be eaten by both old and young just as they need it, provided, of course, that a supply is constantly within reach.

Eggs all through the MOULT!
SHORTEN the moult and lengthen the laying. Globe A-1 Mash (dry buttermilk added) will do it. The live lactic acid bacilli in the dry buttermilk will keep your flock in glowing health: (bulletin 162 U. S. Agr. Exp. Sta., Berkeley).
For Hogs A-1 Hog Feed 10% dry buttermilk) will save from $6 to $12 on fattening each hog.
Fact Book for poultry and hog raisers sent free.
GLOBE MILLS
965 E. 3rd St., Los Angeles
Fact Book
A1 POULTRY FEED
Buttermilk GLOBE A-1 Dry Mash

CHICKENS SICK? Roup, Cold, Canker, Bowel Complaint, Limberneck, Sorehead etc. the best remedy is always GERMOZONE. At most dealers or 75c. postpaid with 5 book poultry library free.
GEO. H. LEE CO., Dept. 418 Omaha, Neb.

Dollar-Making Facts For Poultry Keepers

What is Pratts Poultry Regulator?

A positive tonic and conditioner for poultry of all kinds and ages. *A health-builder and health-preserver.* Not a food.

What does it contain?

Roots, herbs, spices, mineral substances, etc. Each ingredient performs a certain duty. The combination spells "health insurance."

What does it do?

Pratts Poultry Regulator makes and keeps poultry healthy, vigorous and productive. It shortens the molt, sharpens the appetite, improves digestion and circulation, hastens growth and increases egg-production. *It saves feed* by preventing waste due to poor digestion. *It prevents disease* by keeping the birds in condition to resist the common ailments.

Has it been fully tested?

Yes! In general use for nearly fifty years. The *original* poultry conditioner. Imitated, but unequalled

Does it give general satisfaction?

Positively! *Satisfaction guaranteed or money refunded.* Test it at our risk. Increased egg-production will prove that "Pratts makes hens lay."

How is it best used?

Daily in small quantities. For adults, a tablespoonful daily for 10 birds. Younger stock in proportion. Mix with dry or moist mash.

What does it cost?

Nothing, because *it pays big profits.* One cent a month per hen is the *investment* required.

Where can I get it?

From 60,000 Pratt dealers. There is one near you. Direct from the manufacturer, prepaid, if your dealer can't supply you.

How can I learn more about it?

Ask the Pratt Food Co., Philadelphia, for valuable FREE BOOKS on poultry keeping. Write today!

PRATT FOOD COMPANY
Philadelphia Chicago Toronto

Manufacturers of Pratts Powdered Lice Killer, Roup Remedy, Disinfectant, etc. Also Pratts Animal Regulator and Veterinary Remedies

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Pratts

Krogh Manufacturing Company

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Los Angeles, Cal.

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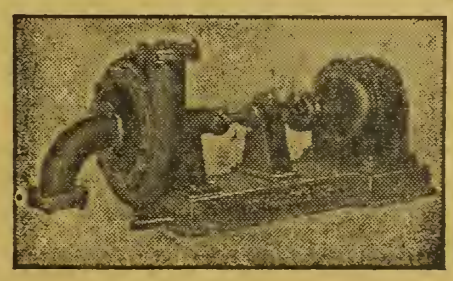
San Francisco, Cal.

Krogh Pumps are Absolutely Water Balanced
No End Thrust Possible No Set Collars Used

THE NO TROUBLE PUMP



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AWARDED PANAMA PACIFIC INTERNATIONAL EXPOSITION GOLD MEDAL AWARD BIGGOM GOLD MEDAL MACHINERY

Fitted with Ring Oiling Bearings

Renewable Babbitted Bushings

Ring Oiling Gland

We also build deep well turbines, deep well plungers, horizontal and vertical pumps for mining, irrigation, drainage.

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You can use both hands and cut twice as much in a day with the

DAVID HEADING KNIFE

as with any other instrument. You cut off the stalk and hold the head with the same hand — and you keep both hands at work, cutting as fast as you can open and shut your fingers. Pair (right and left) $2.50, from your dealer.
Dealers—order from any jobber.

David Mfg. Co.
Dept. D San Jose, Cal.

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

The Winchester pattern. 320 pellets out of a possible 431, or 74% of the shot charge, evenly distributed, no birds get through

A quick eye and a good shot pattern

A QUICK eye and a good shot pattern, that's the game-getting combination. Given an old-timer with a reliable gun in his hand and the rest of the story is up to the shot pattern.

Now the secret of good patterns is in the control of the gas blast from the exploding powder. This in turn depends upon the *wadding* in the shell.

The wadding, like the piston head of a gas engine, must give the explosion something solid to work against so that the shot may be *pushed* out evenly.

It must expand and fill the tube of the barrel, completely sealing in the gas behind it. No gas must escape to scatter the shot.

It must offer just the right amount of resistance to the explosion so as to develop uniform pressure and high velocity without danger of jamming the pellets out of shape at the "choke" or muzzle constriction.

The Winchester system of wadding. The wadding expands evenly, sealing in the gas blast all the way to the muzzle, where it is checked by the "choke" or constriction. The shot cluster travels on ahead unbroken. Actual test target 320 pellets out of 431, or 74% of the shot charge (1¼ oz. of 7½ chilled) inside a 30-inch circle at 40 yds.

The Winchester System

Winchester Wadding is the result of repeated experiments to determine the most efficient control of the gas blast.

The special construction of the *Base Wad* gives what is known as *Progressive Combustion* to the powder charge.

Combustion spreads instantly through the powder charge. By the time the top grains of powder become ignited the *full* energy of the burning powder behind is at work. Though the explosion is almost instantaneous, it is none the less *progressive*, the final energy and maximum *velocity* of the completely burned powder being developed at the *muzzle* where it is most needed.

Meanwhile, under the heat and pressure of combustion, the tough, springy *Driving Wad* has expanded to fill the barrel snugly all around. No gas escapes. It is completely sealed in. The wadding *pushes* the shot evenly.

At the muzzle, the shot pellets slip out without jamming, while the wadding is checked for a brief interval by the constriction of the muzzle. *It follows some distance behind the shot pattern.*

The shot cluster travels on unbroken by gas blast or wadding and makes the hard-hitting, uniform pattern for which Winchester shot shells are world famous.

Fish Tail Flash. All Winchester smokeless shells are made with the new Winchester Primer—the quickest and most powerful shot shell primer made. Its broad *fish tail* flash gives even and thorough ignition. Every grain of powder is completely burned up before the shot charge leaves the muzzle.

The Crimp. The required degree of pressure necessary in seating the driving wads is worked out in combination with the *hardness* or the *softness* of the *crimping* required for any particular shell.

Waterproofing and Lubrication. In the cold, damp air of the marshes, or under the blazing sun at the traps, Winchester shells will always play true. Winchester waterproofing process prevents them from swelling from dampness. Special lubrication of the paper fibres prevents brittleness and splitting in dry weather.

Uniform Shells. From primer to crimp, Winchester shells are constructed to insure the maximum pattern possible from any load and under all conditions. $100,000 is spent annually in the inspection and testing of finished shot shells. 25,000,000 rounds of ammunition are fired every year in testing guns and ammunition.

Clean hits and more of them

To insure more hits and cleaner hits in the field or at the traps be sure your shells are Winchester Leader and Repeater for Smokeless; Nublack and New Rival for Black Powder. Write for our Free Booklet on Shells. **Winchester Repeating Arms Co., Dept. XX-21, New Haven, Conn., U.S.A.**

WINCHESTER

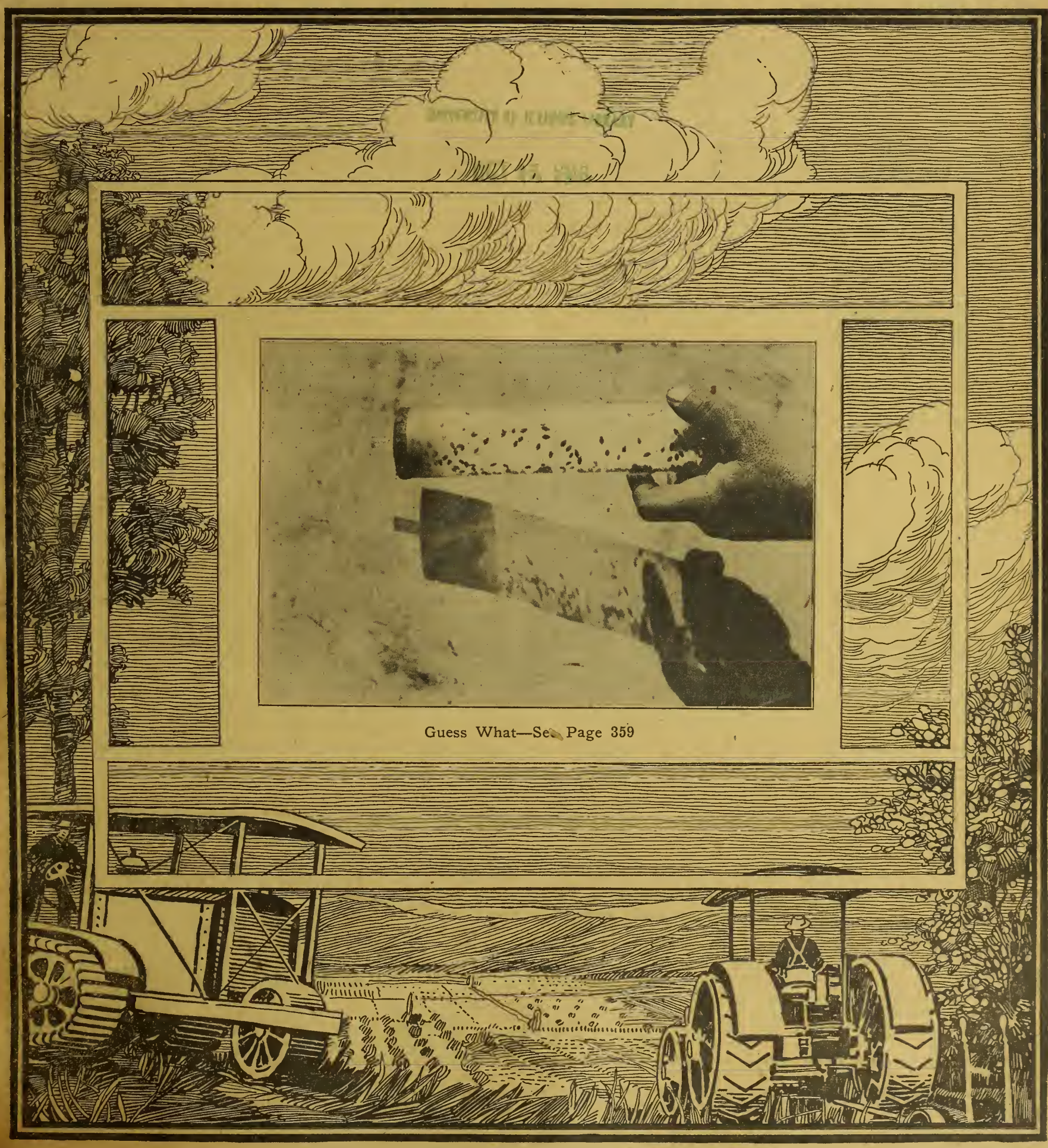
World Standard Guns and Ammunition

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — October 12, 1918 — No. 15



Guess What—See Page 359

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914.
Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916.

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Saturday, Oct. 12, 1918

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

Coming events are casting their shadow on the cover this week. The "events" are in the form of ladybirds. It must be borne in mind that we humans have few firmer friends than the ladybirds. There is a very large family of them, and the one illustrated on the cover is a Cryptolaemus. The third page of this issue gives particulars as to its family history and its husky appetite. This appetite is resulting in ridding hundreds of California citrus orchards of one of their worst pests, the common citrus mealybug. Methods of rearing, of colonizing, and some of the work accomplished are given in the article referred to.

UNTIMELY WEATHER

The storms which have visited the Sacramento Valley are starting the pasturage and retarding the harvesting of rice. To the live stock man it's meat; to the rice grower, poison. Bean men, grain men, and others are suffering because of the weather, but what must be must be borne, so the plows are being started, new crops planted and a greater food campaign than ever is on.

NO BONUS

The sugar factories said they could not pay the prices required by beet growers and growers will not grow at factory prices. At this moment it looks as if next year's sugar output, like this year's, will be seriously short. Not sufficient beets have been grown this year to start all the factories. The growers have appealed to Washington, hoping for bounty or for inducement to the manufacturers to pay a living price. This the government has declined to do. Presumably beans will again take the place of beets.

PURE MILK

Los Angeles claims to have the purest and best supply of milk of any city in the world. This sounds somewhat like a California boost, but as dairymen supplying that city have won gold medals, diplomas and other awards at the National Dairy and other Eastern shows, and now come with a clean-up of by far the greater portion of the state fair awards, she makes fairly good her claim.

The milk scoring contest at Sacramento is reviewed on another page of this issue by Prof. Roadhouse of the state university, and when it is considered that this milk was produced and much of it shipped 500 or 600 miles in the middle of the heated season, the scores are remarkable.

SUBSCRIBE

Liberty Loan subscriptions are falling short. Whether the kaiser has accomplished this through his alleged "peace offensive" or whether it is through indifference is immaterial. Thinking folks should subscribe as never before. The unthinking or pacifists are the ones who are jumping at the conclusion that "bloodshed will now stop" and there will be no need for additional war funds. Six billions is an awful sum and 80 per cent of it must be raised by people with less than $10,000 income. Big manufacturing and moneyed interests are paying enormously in direct federal taxes. Those interests are also taking largely of bonds, but the greater number of us must carry the bigger load.

BASIS FOR TALK

Monday morning's papers were free with large type headlines: "Germany Accepts the President's Terms." Such headlines were decidedly misleading. A truer statement of Germany's position is: "It accepts the programme set forth by the President of the United States in his message to Congress on January 8, and in his later pronouncements, especially his speech of September 27, as a basis for peace negotiations." As a "basis" for talk the President's 14 peace terms would have given opportunity for a whole lot of twisting and turning, which is possible when crafty statesmen get together and have behind them a restored army which has taken advantage of every moment of a much desired armistice. As Napoleon said: "War is like government; it is an affair of 'tact'", and Prince Maximllian appears to have a surplus of "tact"—in good United States language—gall.

LET HIM EAT GRASS

"All this came upon the king Nebuchadnezzar.

"At the end of twelve months he walked in the palace of the kingdom of Babylon.

"The king spake, and said, Is not this great Babylon, that I have built for the house of the kingdom by the might of my power, and for the honor of my majesty?

"While the word was in the king's mouth, there fell a voice from heaven, saying, O king Nebuchadnezzar, to thee it is spoken; The kingdom is departed from thee.

"And they shall drive thee from men, and thy dwelling shall be with the beasts of the field: they shall make thee to eat grass as oxen, and seven times shall pass over thee, until thou know that the most High ruleth in the kingdom of men, and giveth it to whomsoever he will.

"The same hour was the thing fulfilled upon Nebuchadnezzar: and he was driven from men, and did eat grass as oxen, and his body was wet with the dew of heaven, till his hairs were grown like eagles' feathers, and his nails like birds' claws."

Lest we be accused of turning prophet we hasten to admit the above is not original. In fact, it was written some 2498 years ago by a gentleman named Daniel. We think we may prophesy, however, that in about another 2500 years, or in 4418 A. D., the world will be reading words of another prophet, (Uncle) Samuel, with as much interest as we do today regarding the diet of Nebuchadnezzar. That is, if Uncle Samuel stands fast.

And he stands.

> "Kultur in Belgium, and other devastated countries, is a tale so terrible that never yet has one dared more than whisper fragments of it. Yet the wrongs of Belgium, as a State outraged, pale beside the wrongs inflicted in savage, bestial revenge upon its defenceless women and children.
>
> "Such a civilization is not fit to live. And God willing, it shall be mended or ended. To this task America summons every loyal heart and hand. It is a Crusade, not merely to re-win the tomb of Christ, but to bring back to earth the rule of right, the peace, good will to men and gentleness He taught.
>
> "To carry on this crusade of modern righteousness means not merely that our young men shall cross the seas to fight the Hun. It means that we at home shall uphold them. It means that we shall back them with all things spiritual and material. It means that we shall lend, not merely from our plenty, but that we shall save and serve. It means that we shall give up many things that are dear to us; sacrifice, that our Crusaders may save us and our children from the horrors that have come to the little ones of Belgium and of France."

This Week's War Notes

The organization of the Czecho-Slovak army continues in Russia, and so far as can be learned the German officers and troops are retiring.

The war department has arranged for the construction of three additional war plants; one a trinitrotoluol factory to be operated by the Giant Powder Works near San Francisco to cost $1,438,000, two others in Pennsylvania.

The situation in Palestine is still more favorable to the Allies than at first anticipated. The English troops captured in excess of 75,000 Turkish troops, including practically all of the artillery. Our Arabian allies, to the east of the Jordan, captured over 10,000.

A terrific explosion occurred in the shell loading plant at Perth Amboy, New Jersey, 325 buildings of the plant were destroyed, together with hundreds of tons of T.N.T. The more sensational papers announced at first that thousands of lives were lost. The actual loss of life has been reduced to less than 100.

The Fourth Liberty Loan has been unfavorably affected by talk of a German collapse, and far below the proper percentage has been raised up to this moment. The need for a strong front was never greater, and every American is appealed to to do his duty. Subscribe to the Fourth Liberty Loan to the limit.

The collapse of Bulgaria has left the armies of the Allies in Macedonia and Servia to readjust the entire fighting front. The world is guessing as to whether Gen. d' Esperey, in command of the Macedonian forces, will make a plunge toward Constantinople or toward the Adriatic and cut off still more of the Austrian troops before they can escape. Many thousand Austrian troops have already been captured in Albania. The Austrians made feeble attack against the Italians in northeastern Italy, but were repulsed at every point.

Nearly all of the richest coal fields in Northern France are now behind Foch's advance line. Town after town has been captured, and two great wedges, one just above St. Quentin and one above Cambrai, have been driven many miles beyond the old Hindenburg line. The retiring Huns leave only desolation, for most of the homes and all of the factories or resources which may be used in restoration are destroyed. The North Sea end of the line is being bent back more and more, and the capture of Zeebrugge is not far away. At the southern end of the line the Americans are active, though no large engagement has taken place during the week.

The president's reply to Germany comprises a total of less than 300 words. Those 300 words are filled with American spirit and punch. There are no claws visible; it is all velvet. In fact, it is not a reply, but, Yankee-like, a question. "The president of the United States deems it necessary to assure himself of the exact meaning of the note of the imperial chancellor." "Does the imperial chancellor mean that the imperial German government accepts the terms laid down by the president, etc.?" "The president — would not feel at liberty to propose cessation of arms—so long as armies of Central Powers are upon the soil of our Allies." "Is the imperial chancellor speaking 'merely' for the constituted authorities who have so far conducted the war?" The quote on the word "merely" is ours, but the heart of one, Kaiser Bill, will go down to his boots at that word.

The most interesting item in the war news this week is the fact that the Huns are begging for peace. They do not admit it, however, and make their appeal as if granting a great concession to the Allies. The United States and all the Allies seem desperately indifferent, or, as Theodore Roosevelt expresses it: "The German government does not have to worry about peace terms. America and the Allies will tell Germany what she has to do. All she will have to do is to say, Yes, sir.'" The appeal was made by Prince Maximilian, the new imperial German chancellor, through the Swiss ambassador, the Austrian appeal through the Swedish ambassador. They were practically identical and accept the peace program as outlined by the president in a message to congress in January as a "basis" for negotiations. Prince Maximillan was appointed from the more liberal of the Socialists of Germany and it is generally considered that his selection was for the purpose of carrying the idea that the appeal was from the German "people." While the note was forwarded to the president of the United States it was with the request that he "acquaint all belligerent states, etc."

The Mealy Bug Surrenders to Cryptolaemus

By C. B. Messenger

I WELL recall many years ago, perhaps about 1887, visiting one of the first commercial orange orchards in California, known as the Wolfskill Place, near where the Southern Pacific depot now stands in Los Angeles. The trees, which had been large seedlings, were practically defoliated and were hung with a sticky and disgusting mass formed of honey-dew and of the refuse and bodies of millions of the scales generally known as the white scale (Icerya purchasi), or cottony cushion scale or sometimes fluted scale.

Nor was this the only orchard in the state infested thus seriously. Hundreds of citrus orchards in varying degree were being wiped off the slate as a commercial factor, that is, hundreds of orchards—if there were hundreds in the state at that time—for it must be borne in mind that a year's output then is sometimes nearly equaled by a single weeks' shipments now.

Catching Adult Ladybirds

H. M. Armitage, shaking cryptolaemus from branches of the lemon trees in the Culp orchard in Ventura.

Spraying methods were primitive; fumigation was as yet practically unknown; though most serious investigation was being made along both lines. In addition there had been for years men in this state who believed in turning on the armies of bugs other bug armies which would automatically control them.

Albert Koebele, agent of the U. S. department of agriculture, went to Australia and in 1889 came back with a little lady-bird, the common vedalia, we believe more recently and correctly known as Novius cardinalis. This little lady-bird was a wonder worker. In fact, the result of its introduction has been declared to be one of the most astonishing events in economic insect control. In a word, California's orchards were ridded forever of the pest of white scale. There are still occasional outbreaks of white scale in this country. There are also colonies of the vedalia, and they are always on the job. One of the beneficial works of the state insectary, operating under the state commission of horticulture, is the maintenance of the life of this wonderful insect.

Since then almost unnumbered pilgrimages have been made to all parts of the world seeking for the natural enemies of injurious insects. One of the most interesting exhibits at the recent state fair, and an exhibit which is being made at the Liberty Fair now being held in Los Angeles, is that of a big green beetle, Calasoma, introduced from Europe by the federal government in the effort to control the gypsy moth. This monster goes over the top like a regular steel tank. He is a beetle about an inch in length, greenish-bronze, and when a bit hungry tackles a big tomato worm or similar morsel very much as would a terrier a rat.

Another beneficial insect introduction which created much interest and which in limited districts promised much, was that of the Rhizobius which preyed upon the black scale. At Santa Barbara — on the Elwood Cooper place—this insect (or these, rather, for there were four different members of the family, the ventralis, debilis, toowoombae, etc.) did some wonderful work. About '89 or '90 I went to Santa Barbara for 25 orange growers to get colonies of these insects. They were gathered under the direction of Alexander Craw and later liberated in Pomona orchards. But, as was the case with this insect almost everywhere, none of those colonies ever were heard of again.

In more favored locations, such as near the sea, these beneficial insects may still be found and possibly are more beneficial than we ordinarily credit them with being.

Up the Flue

The cryptolaemus has a way of hunting out the hidden and shady spots. Underneath this tree, which has been colonized by the cryptolaemus, was the old smokestack of an orchard heater. The end of the pipe, into which we are looking, was hidden and darkened, but it had been found by the crypts. In addition the burlap band around the tree, which had been provided to give the bugs a hiding place, had been sought out, and in the depression may be seen many of the pupae massed together. The adult ladybird goes forth to seek more mealy bugs.

But neither space nor general interest calls for a list of the efforts to introduce these natural enemies of injurious pests. But one such introduction is worth a story. It may not prove as marked an example of the advantage of scientific investigation of fruit growing problems as did the vedalia, for one reason at least that the pest in question has never secured the foothold which was secured by the white scale. This pest is the mealy bug.

There are mealy bugs and mealy bugs. Four, which are economic factors in California fruit growing operations, are: Pseudococcus citri, P. citrophilus, P. bakeri, P. longispinus, In fact there are oodles of these varieties of the pseudococcus—with the accent on the last syllable—but for the purposes of this story the first mentioned is sufficient.

The Pseudococcus citri, or more commonly called the citrus mealy bug, has been sprayed with carbolic acid emulsion, has been fumigated double strength twice in succession, and still comes up little the worse for wear. The result of the work of the pest on citrus trees was such that not only was the fruit made unsalable, but the tree was ultimately practically destroyed. There have been seasons and locations when the pest seemed to gradually disappear after it had taken hold of an orchard. Those making a study of its work were aware that it had natural enemies which accounted for its disappearance. There was the green and brown lacewing, the leucopis, the scymnus of the lady-bird family; all of these being predators. In addition there were parasitic insects, such as the Paraleptomastix, or usually called Leptomastix, recently introduced from Sicily by the state insectary.

Harvesting the Bugs Ready to Ship

The container which Mr. Armitage has in his right hand is more plainly shown in the cover illustration. The small glass tube projecting from the stopper end of the larger glass tube is open. When the bugs are shaken from the tree onto the sheet supported by the light frame they instinctively "play possum." Swift work will then soon secure within the larger tube a dozen or more of the ladybirds. This is repeated until hundreds or more may be gathered. The end of the large container, which is hidden in the hand in the cover illustration, may then be removed the same as the cover of a tin box. Then the crypts are jarred into the permanent mailing tube.

Migrating

Pasture is getting short in tree top. Hence the little crypts are migrating to grow up in another tree, and they may be seen on tree trunk and heater in the above photograph. Photos by California Cultivator.

The trouble with some of these beneficial insects is that they have their insect enemies, and it seemed impossible to secure sufficient natural increase to overbalance the destructiveness of the natural enemies. But there was one exception, and this proved to be also a lady-bird, Cryptolaemus montrouzieri. This insect was likewise introduced by Mr. Koebele, acting at that time under direction of the department of agriculture and with the cooperation of the state horticultural commission, or at that time, board, of California.

Continued on Page 362

Agricultural News Notes of the Pacific Coast

Northern California

Plumas County reports the largest fruit crop in six years.

Woodland reports Yolo County's rice harvest as proceeding.

Glenn County will replace much barley acreage with wheat.

The anthrax situation in Yolo County is reported much improved.

Farmers' short courses are now in session at Davis university farm.

The Maxwell Rice Company of Colusa County is harvesting 2800 acres of rice.

Fig harvest is in full blast, the crop is about 50 per cent normal owing to the dry season.

A county wide fight against pear blight has been inaugurated in El Dorado County.

Warehousemen at Oroville are planning to make room for much of the Richvale rice crop.

California's live stock shipments for the month of August are 56.2 per cent over those made for July.

A serious outbreak of anthrax in several sections of the Sacramento Valley is causing great losses to live stock.

Freeman & Graves, Willows, are building a new warehouse 80x100 feet, capacity 80,000 bags, to be used for storing rice.

Several farmers of the Esparto district of Yolo County are planning to put in large acreage of Early Baart wheat this year.

Rice men of Butte County are also disturbed because of the rainy weather which has delayed maturity of their grain crops.

One thousand acres old prairie land between Anderson and Cottonwood has been brought under irrigation and is being put into alfalfa.

Farm Adviser Sweet of Butte County will aid the draft boards in giving recommendations as to needed exemptions for agricultural work.

The El Dorado County farm bureau held its annual farm picnic at Coloma, October 10. Exhibits of farm crops and live stock were made.

Northern California's olive crop is estimated at 50 per cent of normal by E. H. Ehmann of Oroville. He also states that the crop will ripen early.

An almond grower of Esparto, Yolo County, recently drove into town with a load of almonds consisting of 225 sacks and rode home with a check for $4590.

The epidemic of anthrax in Yolo, Colusa, Butte and Glenn Counties continues, much valuable stock has died, vaccination is being performed as rapidly as possible, horses, mules, cattle and hogs suffer.

The El Dorado County farm bureau directors met recently at Placerville and discussed cooperative fire insurance. Adviser Jones reported on the material increase in crop production required for 1919.

The Cultivator representative in Glenn County writes of cool weather and rains retarding the ripening of rice, but the condition has been materially improved by warmer weather the past few days.

W. D. Englebert of Willows, a rice grower and an authority on rice, estimates 3,250,000 bags as this year's crop. He has raised his estimate 250,000 sacks since the late rain, claiming it has benefited late rice.

Central California

Construction on a new flour mill has begun in Modesto.

Atwater, Merced County, has just held a most successful harvest fair.

More than half of the Muscat grape crop of the state has already been picked.

Hanford has been made a center for receiving castor bean seed for government use.

The Santa Cruz County farm bureau is aiding in the campaign for a big wheat acreage.

Cattle being brought down from mountain pastures are mostly in excellent condition.

A number of Kern County alfalfa growers have joined the California Alfalfa Growers' Association.

Riverbank, Stanislaus County, reports heavy losses to hay in outlying districts from the recent rains.

The annual Fresno County farm bureau mass meeting and picnic will be held at Kearny Park October 24.

Grain men of Madera County have pooled their orders for seed wheat and are purchasing in large quantities.

Owing to prospect for early rains stockmen are bringing their cattle out of the mountains as rapidly as possible.

California's celery crop will be 90 per cent of normal. Carload shipments will start about the 20th of this month.

Two careless campers in Tulare County were last week given fines for leaving their fires burning while they were hunting.

Complaints are being made of damage to Santa Cruz County roads by heavily loaded narrow-tired wagons and heavy tractors.

The greater proportion of raisins is past danger from the storms and growers are rapidly stacking all which are not fully dried.

A mass meeting of wheat farmers of Fresno County and others interested in the more wheat campaign was held at Fresno October 2.

The fig crop of California this year is estimated at from 8000 to 10,000 tons. The movement of the crop will continue well into January.

San Joaquin County is asked by the federal government to increase its wheat acreage by 10,000. That will mean a planting of 35,000 acres.

Emperor grape growers of the San Joaquin Valley are receiving such long prices that if rains hold off the output will bring in large returns.

Fresno County reports no damage to table or raisin grapes from the rains which did so much damage to these crops in sections farther north.

Demonstrations in morning glory control are being given in Santa Cruz County by Prof. Geo. P. Gray of the state university. The means of control demonstrated is an arsenical spray.

Local meetings of the San Joaquin County farm bureau are announced for Lockeford, October 14; Ripon, 17; Manteca, 18; Escalon, 21; Live Oak, 28. Directors meeting at Stockton, October 12.

W. F. Chandler of Fresno has been nominated agricultural adviser of the district draft board which has jurisdiction in the San Joaquin Valley and Southern California Counties outside of Los Angeles.

Southern California

A new gin has been installed at Indio, Imperial County.

The food administration announces that it will not fix prices of beans.

The Liberty Fair opens today, October 12 at Exposition Park, Los Angeles.

The coming citrus output is estimated to be around 60 per cent of normal.

Twenty-five women of the Land Army have gone to work on a seed farm in Santa Ana.

The Hueneme, Ventura County, tomato packing house will put up approximately 10,000 tons.

Citrus growers are planning to engage units of the Women's Land Army for harvesting the coming citrus crop.

Imperial Valley's cotton crop is proving one of the biggest and finest ever. Harvesting is proceeding under fair labor conditions.

The Doheny ranch near Los Alamos, Santa Barbara County, has 1700 acres in Limas and a large planting of sugar beets, a new crop for that section.

Huntington Beach held an Orange County fair October 2, 3, 4, 5. Exhibits will be taken from this fair to the Liberty Fair in Los Angeles which opens this week.

Imperial County has a new home demonstration agent in Miss Ruth Dickey. Miss Dickey is now in the valley attending the series of special farm center meetings started September 30.

In answer to petition of Chino beet growers that they be granted a government bonus on sugar beet plantings word has been received that the government will neither set a price nor grant a bonus.

Bean growers of Ventura County are objecting because their fields are still unthreshed for want of men while men are kept busy gleaning in the fields of the more fortunate ones whose crops have already been threshed.

The sheriff of Orange County has been appealed to to prevent gleaners from going to bean fields and gathering lima beans which have rattled out in windstorm or in process of harvesting. Such beans have been commonly considered public property, but at 12 cents a pound the farmers insist on arrest of those taking the beans without proper arrangements.

There are two Santa Clara Valleys in California; one of course in Santa Clara County and one along the Little Santa Clara River in Ventura County. The Ventura County Valley has a new association, the "Santa Clara Valley Agricultural Association." Its first work will be along the line of handling the labor question of all of Ventura County. Membership in the association is open to producers and to laborers.

Orange County farmers have formed an association for handling the labor question. A mass convention recently held was addressed by J. P. Dargitz, field representative of the state council of defense. He roundly roasted the I. W. W. and "poachers" on the other hand. The "poacher" is the farmer who hires from under his neighbor farmer his entire crew at perhaps a slight advance in wages. He said there should be more brains used in the handling of the labor situation.

The Coast and General

Arizona is marketing a good harvest of dates.

The Oregon agricultural college opened on September 30.

Prune growers of Lane County, Oregon, are getting 8½ cents.

Cranberry picking is on in the marshes of Clatsop County, Oregon.

Oregon is planning to put in a largely increased acreage of winter wheat.

Coos County, Oregon, claims more silos than any other county in the state.

General rains throughout Utah have put stock ranges in excellent condition.

The Willamette Valley of Oregon, has had an excellent prune crop. both in quality and quantity.

The Ohio college of agriculture is planning to make an actual census of all cattle and hogs in the state.

Farm owners of Langell, Oregon, are planning an irrigation district to put some 20,000 acres under water.

An intensive study of cotton varieties is being made at the federal experiment station at Sacaton, Arizona.

The salmon pack of the Columbia River for the spring of 1918 amounts to more than four and a half million dollars.

A uniform system of potato grading for Canada and the United States is being urged by growers of New Brunswick.

The government of Burma has an agricultural loans act whereby it is empowered to advance money directly to farmers.

The entire crop of prunes of Clarke County, Washington, has been ordered held until government requirements are satisfied.

The Lemi County fair at Salem, Idaho, held October 9, 10, 11 had as one outstanding feature a sale of bulls by the Shorthorn Breeders' Association.

Wheat shipments to Astoria, Oregon, have been embargoed as the capacity of the elevators and transportation facilities at that center has been reached.

Governor Withycombe of Oregon has made offer of the state fair grounds at Salem for use as an army cantonment. The grounds have already been used for the fall fair.

Yakima, Washington, hop growers, as a result of the announcement of the order prohibiting the manufacture of beer after December 1, ceased picking the valley's crop last week, which is estimated at between 17,000 and 20,000 bales. Cessation of harvesting will, it is estimated result in a loss of at least $260,000 to the growers.

The state advisory committee of the United States employment service, which will have supervision over the recruiting and distribution of labor and the transfer of men for war work from industries which are not directly connected with the prosecution of the war, was organized recently by William T. Boyce, superintendent of the Pacific Coast district.

Federal agricultural officials are preparing a national agricultural war program indicating the quantities of food which should be produced next season to support an army of 4,800,000 men in France. It is expected that in each state the agricultural college through its extension service and including the county agricultural agents, will take charge of the program.

Taking the School to the Farm

Written for California Cultivator by C. A. Nidever

THE dry legal phrasing of an act of congress does not make particularly exciting reading to most people. It is likely that if any farmer read the following act he would have passed it up as entirely out of his line, though it is to the farmer especially, and to the American people as a whole one of the most far reaching acts of congress:

The act reads:

"An Act passed by the Senate and House of Representatives of the United States of America, in Congress Assembled, Entitled an Act to provide for the promotion of vocational education; to provide for the cooperation with the states in the promotion of such education in agriculture and the trade and industries; to provide for the cooperation with the states in the preparation of teachers of vocational subjects; and to appropriate money and regulate its expenditure."

It means that the federal government has agreed to appropriate money to establish a course in agriculture and trades in any public school in the United States and to help train teachers for such education. The act is sometimes called the Smith-Hughes bill.

It was approved by the president Feb. 23, 1917, accepted for California by the governor May 29, 1917, adopted by the state board of education July 19, 1917.

It is now a full fledged law and can be established in any high school of California that wishes to train its students in agriculture and trades.

All that is necessary to establish the Smith-Hughes bill in the high school is for the trustees to apply to the state board of education for the course and fulfill the requirements for its establishment.

The main purpose of the act is to give a finished education in agriculture and the trades to persons above 14 years of age who desire such education, irrespective of whether they are going to school or not.

The state board of education has divided the act in two parts: Agriculture which will apply more to the high schools of agricultural districts; trades, household economics and industries, which will apply more to city schools, though household economics is gaining steadily in favor in rural districts. However, any school may put in all subjects if it is so desired.

It is the purpose of this article to show mainly what the Smith-Hughes bill has for the farmers and the person who wishes to take up agriculture in any of its branches.

Any farmer or farmer's wife or any person of any occupation, boy or girl, over 14 years of age who is willing to go to school three hours each day may take up the course and study any phase of agriculture that they desire.

We will say for instance that a young man is in the dairy business. He may take three hours each day at school and get a thorough course in dairying. Milk testing apparatus will be at his disposal. He will learn to use it and will test his own herd.

Agricultural journals and reference books of the highest authority will be in the school library for his use. He will receive individual instruction in feeding, breeding, marketing and general management of his herd.

Three hours each day at school is required of each student no matter what branch of agriculture he takes up.

The student must conduct at least one school farm project each year.

This must consist of the production and marketing of farm, orchard, vineyard, or garden crop, bees, poultry, stock, etc.

What special study one will take is a matter of individual choice. The project is under the supervision of the agricultural teacher and must be conducted along scientific and business lines as laid down by him. An accurate account will be kept of labor expended, seed and all transactions pertaining to cost of production and marketing. The accounts will be balanced at the end of the season so that the student will know how much he has made and where and how he has made it.

This farm project work is designed to fit in as much as possible with the regular farm work that the student is doing or is helping to do at home. If a man is farming grain and his son is taking an agricultural course in high school, a few acres will be laid out which will be worked by the son under the supervision of the agricultural teacher. The same will apply to any other branch of the course.

The object is to take the school to the farm to teach practical up-to-date farm methods to the coming generation of farmers.

It is a tool being put into the hands of the boys and girls of today to enable them to work intelligently and scientifically at agriculture, which is, when conducted on a paying basis, one of the most satisfying, honorable occupations in existence.

At school the student will study farm mechanics, which consists of farm carpentry, concrete and cement work, plumbing, pipe fitting, forge work, operation and repair of motors, engines and automobiles.

Electrical wiring and other such mechanical operations that every well trained farmer needs in his daily work will be studied.

A thorough course in farm mathematics will be given, such as farm accounts, algebra and geometrical problems. This work is designed especially to aid the farmer in his calculations on the farm.

Physics, chemistry, soil study, biology and sanitation are subjects that the embryo farmer will absorb for future reference.

Farm English to consist of scientific and literary writings dealing with rural life will be taught. Compositions will be written by students upon farm life and the business of farming.

The following is approximately the amount of money that will be available for California from federal and state funds.

For work conducted during 1918-19, $27,592; 1919-20, $36,790; 1920-21, $45,987; 1921-22, $55,185; 1922-23, $64,382; 1923-24, $73,580; 1924-25, $91,975; 1925-26, $110,372; and annually thereafter $110,372.

Schools that take up this course are authorized to provide the necessary equipment, such as carpenter shop, blacksmith shop, lathes and all necessary tools.

This course when established becomes a part of the regular public school system. The agricultural teacher, though his salary is partly paid by the state and federal appropriation, is a member of the school faculty and has the same standing as the English, history or mathematics teacher.

The Smith-Hughes bill work should not be confused with the present course of manual training, domestic science and academic agriculture now taught in some schools.

It is strange that we have been so long in establishing agriculture in our school system. To till the soil is an instinct with the human race. It was its first occupation. It is the last to be taught in our public schools.

Education is the best investment that the young man or woman can make. That the young people get an education, is the best insurance to America that she will maintain her present high and honorable position in the world.

The country schools lag behind the city schools in efficiency. Let us see to it that every opportunity is given the country boys and girls to perfect themselves in their very important life work.

Preparation is the key note of efficiency. Let us have preparation without stint.

Mr. Farmer, if you haven't the benfits of the Smith-Hughes bill established in your high school go to your trustees and demand it. It is your patriotic duty to see that all possible be done to get it.

Making Alfalfa Silage

By F. W. Woll, University of California

ON ACCOUNT of the weather conditions this fall and the possibility of the rainy season starting in early, many farmers are considering whether it will not be necessary to make silage of the last cutting of alfalfa to save it for feeding. There is but little experience at hand in regard to making silage from this cutting, and the question is frequently asked as to the quality of the silage made from alfalfa alone. It is entirely feasible to make good silage from a pure stand of alfalfa, and where the weather makes it doubtful whether it can be successfully cured the silo offers the only safe way of preserving the crop for feeding purposes. The best results in making alfalfa silage are reached when the crop is put into the silo not too green nor with too much water in it and when the cut alfalfa is carefully packed so as to leave as little air as possible in the siloed mass. The alfalfa is therefore preferably cut at full bloom; if it is considered safer to cut it before this stage it may be wilted somewhat before being filled into the silo, say by cutting in the morning and leaving it until the afternoon, or even the following day. It is important, however, that the crop be only slightly dried out, for a certain amount of moisture (about 60 to 80 per cent) is necessary to secure correct silage fermentations. If the alfalfa as filled into the silo appears rather dry so that it does not feel moist on pressing a handful hard, it will be necessary to add some water to the top layer in the silo and thorough tramping during the filling process, especially along the wall, is particularly important in such a case. Water can aso be added by running a small stream into the blower during the filling, but this is only necessary in the case of very dry forage.

If put up as suggested, the alfalfa silage will have a clean, slightly acid flavor and will be readily eaten by stock. Such alfalfa silage has not, in general, quite as agreeable an odor as silage made from well matured Indian corn or sorghum varieties, but after stock has gotten accustomed to it they like it and will eat nearly as large amounts as of corn or sorghum silage.

In making alfalfa silage this crop has sometimes been mixed with carbohydrate feeds like Indian corn stover, sorghum stalks, straw, corn chop or molasses. This is done to insure similar fermentations in the silo as in the case of the crops of the grass family mentioned. Kansas experiments showed that 5 per cent of molasses added to the alfalfa makes silage of best quality, but any of the materials given may be used for this purpose, and these feeds may thus be utilized for stock feeding with least possible waste. The main difficuty in the way of mixing alfalfa and corn stalks, straw or similar materials for the silo is to secure an even mixture of them. Alternate armfuls should be run through the cutter so as to get a uniform mixture and it is generally difficult to do this in ordinary farm practice. If alternate loads are filled into the silo, there will be distinct layers, about a foot thick, of alfalfa and corn stalks or whatever other material is used, and in feeding out the silage, stock will be shifted from one kind to another, which does not make for best results. Fortunately, however, it is possible to make a good quality of silage from alfalfa only, as by the method suggested above, and where an even mixture of the silage crops cannot be secured, the better practice is to silo the materials separately, either in the same silo, placing the heavier feed on top, or in different silos.—F. W. W.

* * *

In addition to Prof. Woll's suggestions above, we may add that the food administration, or rather Mr. Hoover personally, appeals to the American farmer in the following message:

Use All Roughage Available

Owing to the extension of the drouth area, the shortening of the corn crop, the larger population in the country, and the Allied demands upon us for feeding stuffs for their own animals because of their own shortage in produce of feed grain, it is necessary that we should exert every effort in the proper conservation of feeding stuffs during the next twelve months. It is necessary that we should ship a larger proportion of wheat as compared with flour during the next twelve months than during the last twelve months to the Allied countries, because their

Continued on Page 373

The Wonder Pump

Guaranteed 5 Years

The Wonder Pump is a Wonder Because:

1—It requires less power than other pumps.

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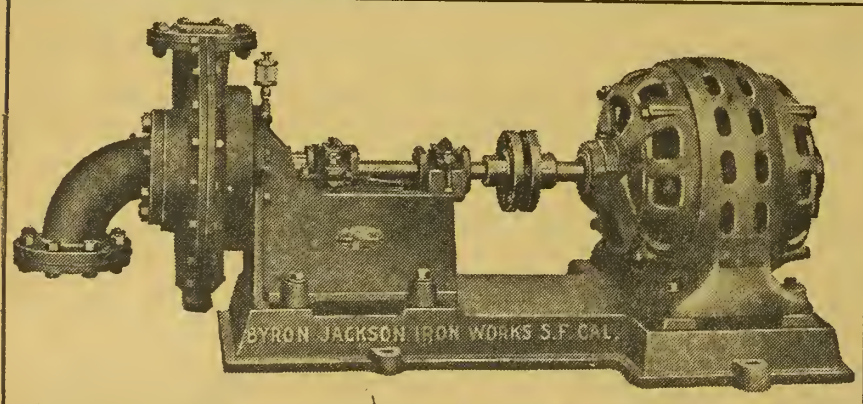

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Wm. Gregory and Sons

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Los Angeles, Cal.

THE MEALY BUG SURRENDERS

Continued from Page 359

Notwithstanding a residence of more than a quarter century in California this ladyhird had never attracted marked attention. She had continued to board herself, however, and kept the family together, and oc casionally in making examination of the depredations of the mealy bug, Mrs. Cryptolaemus and the little Cryptolaemuses were found husy.

The planting of the cryptolaemus in California began under the administration of Elwood Cooper and other members of the old state board of horticulture. Watchful care was maintained over it and its work by Mr. Carnes, under the administration of J. W. Jeffrey, and later by Harry S. Smith of the state insectary under the administration of Dr. A. J. Cook and G. H. Hecke.

Curtiss P. Claussen has perhaps given more intensive study to the mealy bug question than any other Pacific Coast investigator. In September of 1915 the University of California issued Bulletin No. 258 written by Mr. Claussen. At that time he found that "At present only occasional specimens can be found, even in heavily infested groves, and there is little reason to believe that this parasite is in any very large measure responsible for the general decline in the severity of the mealy bug infestation in that county since that time."

But later when Mr. Claussen transferred his activities from the university to the state horticultural commission and went south to take charge of the Alhambra hranch of the state insectary he began finding indications of most effective work hy the little crypts. One difficulty to overcome was that the life cycles of the two insects were not identical. The life cycle of the mealy bug is more extended than that of the cryptolaemus, and after the larval and adult crypts had devoured the entire generation of mealy bugs another generation refused to come on in time to save the life of the little predator.

At this point human effort stepped in, and under indoor conditions where warmth overcame winter influence large numbers of mealy bugs pasturing on potato tops were used as pasture for larger numbers of cryptolaemus. About that potato top pasture:

I went to Alhambra a few days ago, and H. M. Armitage, assistant superintendent of the state insectary and in charge of the Alhambra branch, showed many interesting things of the insect world and took particular pride in his potato field. The insectary is not growing potatoes to help Hoover, directly, but is producing lush young potato sprouts which are especially tasty to young mealy bugs. When the sprouts are six or eight inches long, the growth heing secured in a darkened cellar, the mealy bugs are turned into the pasture. The stock is secured from the leaves and fruit of lemon trees. When the infestation becomes complete the adult lady-birds of the cryptolaemus are admitted. Within a few weeks the eggs have hatched, and the larvae, not entirely unlike the mealy hugs themselves, proceed to move from sprout to sprout and devour the adult, the larva and even the egg of every mealy bug. Then if the season is proper a colony is taken from this cage and placed in the orchard.

By means of this indoor hatching it is anticipated there will be millions of these crypts for March or April distribution and that another year will see a material reduction of California's mealy bugs.

Sprouting Potatoes

When these potatoes have sprouts half a foot long they are put in the breeding cages covered with gauze and muslin, and the mealy bug takes to the sprouts like a duck to water. When fully infested a few adult ladybirds are released in the cages, and they send out the call to other ladybirds; "Come on in; the mealy bugs are fine," and soon the cage is filled with more crypts to eat more mealy bugs.

In addition to seeing laboratory work with these predaceous insects, through the courtesy of Mr. Armitage I was shown through the Culp orchards at Ventura some weeks ago. The photographs on this page give a more vivid impression of the work being done in that orchard than can be given by words. In early spring portions of this orchard were so seriously infested with mealy hug that no marketahle fruit was to be had and the trees hore a most sickly appearance. At the time of the visit in early September scarcely a mealy bug was to be found, but there were thousands of crypts seeking someone to devour. Note in the photograph where the oil pot is stored under the tree. The white specks showing plainly in the picture are crypts seeking new pastures. Those particular trees were entirely free from mealy bug.

In this desire the little friends of the citrus grower are given aid and comfort by a force of state and county employes. A. A. Brock, horticultural commissioner of Ventura County, has carried many colonies to other citrus orchards. In many cases the owners of these orchards are doubting Thomases and wear a rather cynical expression when the bugs are released, and it has to be confessed that sometimes the cynic has the opportunity of saying: "I told you so." However, ultimately the cryptolaemus makes good and destroys the enemy of the orange and lemon tree. Mr. Teague and Mr.

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until after you have read a pamphlet we shall soon issue regarding Pear Blight. Contains facts about Blight-Resistant stock that may make a difference of thousands of dollars to YOU, if you intend to plant an orchard to this most profitable of fruits. Sent free as soon as received from the printer to those who state the number of trees they will plant.

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SPECIAL NOTICE:—If you have not enough money to buy our pear trees and also Liberty Bonds—buy the Bonds. We'll "get by" without your money—but our country can't. If it makes it any easier for you, we'll take bonds of any issue for 50 per cent of your order, and take them at par value.

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We are always in the Market for Lemon Culls

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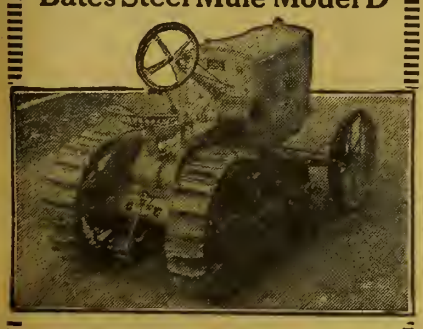

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Large Experience Gets Results

Culbertson of the Limoneira orchards have planted many colonies.

A general supervision of the distribution of these colonies is maintained by the state horticultural commission. Mr. Hecke has been insistent on the Alhambra branch of the state insectary doing a work which shall be of decided value to citrus producers of the state. This branch is located in the center of the citrus district. More, it is located in a district which is infested with all four varieties of the mealy bug.

Since Mr. Claussen and Mr. Perrin, who immediately succeeded him, have gone into army service this station has been under the direction of H. M. Armitage, assistant superintendent and in charge of the branch. Mr. Armitage and Paul Howard, his assistant, now have a merry family of the cryptolaemus, and they have on hand a fund of information for the citrus grower who will call at the branch state insectary.

There are scores of other insects which have been introduced, which have proven more or less beneficial. Nature's way of controlling the pests, most of which have been introduced from other countries, has strong ap-

Lemon Infested With Mealy Bug

peal, especially to the grower who has seen his profits disappear in the long costs of fumigation and spraying. Research work is being conducted by Dr. L. O. Howard, of the entomological bureau of the United States department of agriculture, with many assistants investigating in foreign lands. Dr. Howard has been inspired to much of his work and enthused by the cooperation and success which has been secured in California. This state is a pioneer and is today passing on to other countries some of the advantages it has secured because of years of hard work. Today many colonies of cryptolaemus and other insects are being sent to France and other countries. The latest work taken up under direct supervision of the state commission was the sending of E. J. Vosler to Australia to secure the best leaf hopper parasite or any predaceous insect which would also prey upon the mealy bug.

ANNUAL MEETING LOS ANGELES COUNTY FARM BUREAU

The first annual meeting of the Los Angeles County farm bureau will be held in the auditorium of the Armory building at Liberty Fair grounds, corner South Figueroa and Exposition Boulevard, on Thursday, October 17, at 10 o'clock. The meeting will be adjourned at noon in order that all who desire may spend the afternoon at the Liberty Fair.

This is a general meeting of the farm bureau and every member of each center should make a special effort to attend. An interesting program is being arranged.

Remember the date and come to the meeting.

"It is one thing to ask a man to save. It is one thing to ask a man to invest in Liberty bonds. These things tremendously aid the nation; but they are also a certain benefit to the individual. It is another thing to ask a man to put his labor and capital into the production of food, facing the hazard of the weather, of distribution, and of the market."—Secretary Houston.

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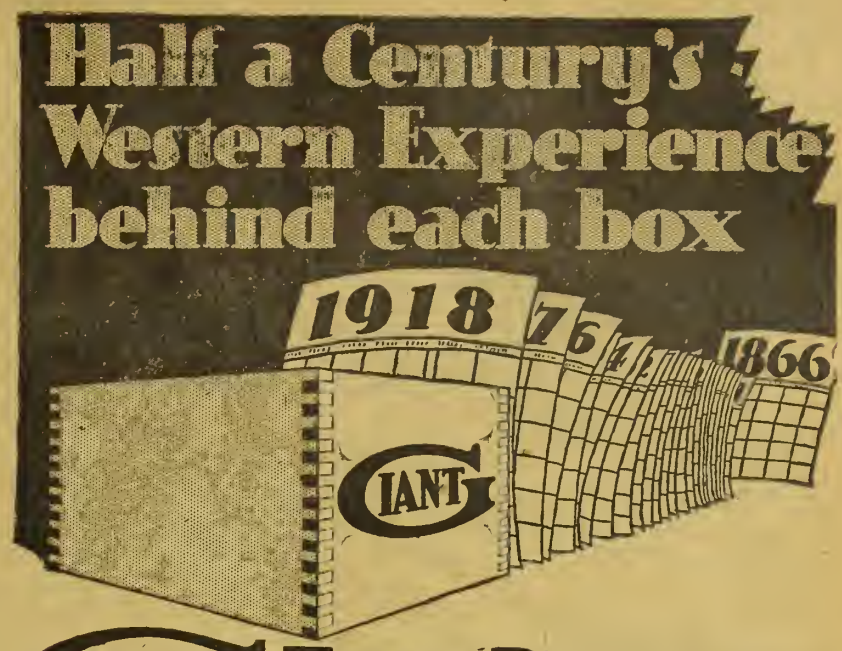

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Weighs less—costs less! Yet has greater speed, power, strength and **lasts longer!** Made of finest steel. **3 year guarantee against breakage.** Clears acre from one anchor. Pulls stubborn stumps in few minutes at low cost. Single, double, triple power. Several speeds. Low speed to loosen stump—high to yank it out quick. Patented quick "take up" for slack cable. Easily moved around field. No other stump puller like it! All explained in big FREE BOOK. Write for book today! Also for Special Agents' Proposition. Shipment from nearest distributing point saves time and freight. Address me personally.

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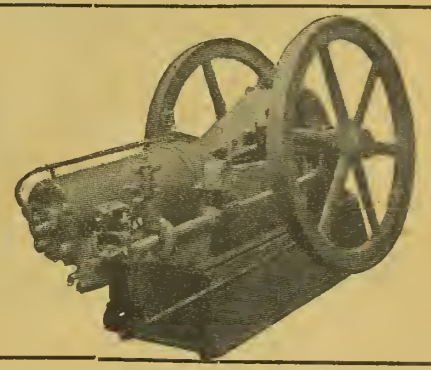

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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Ice Cream Without Sugar

In reading through Household Queries in the Cultivator of September 7, 1918 I find a fellow subscriber who would like a substitute for sugar in ice cream. Here is my recipe which I have used all summer, and which I find very good.

Two boxes of Jello ice cream powder, two eggs, two tablespoons white karo syrup, flavoring about three quarts of milk or milk and cream.

Dissolve Jello ice cream powder in one cup of milk. Add yolks of eggs, Karo syrup and flavoring. Mix well, lastly add beaten whites of eggs and pour in freezer with milk. If freezer is not full a little more milk may be added.

This will freeze one gallon. Crushed fruit may be used if a small quantity of sugar is added.—Mrs. David Warnock, Waukena.

Little Leaf

Am sending branches from peach tree. Tree started well in the spring but all the later leaves are extremely small, yellowish leaves. Trees have borne no fruit. What is trouble and cure?—Subscriber.

This is a case of little leaf, the cause of which is not thoroughly understood. It is denied by some but others maintain that little leaf is a poor physical condition of the tree induced by an over dry condition about the roots in the preceding fall. Many fruit growers have an idea that once the fruit is off the tree the demand for moisture is over, and the tree is allowed to become seriously injured or possibly to die. Many a shy crop has resulted from this extremely dry soil condition in the fall time. It takes moisture to plump up and perfect next year's fruit buds. Even when the tree is supposed to be perfectly dormant in mid winter the roots still require some moisture. However, there may be other causes of little leaf and some day the question may be better understood.

Peach Tree Dying

In my peach orchard many trees show a great deal of dead wood. Many of the leaves look healthy excepting for peach leaf curl and fungus spots. In other cases the entire tree is dead. What is the trouble?—Subscriber, Downey.

See answer to Little Leaf for we think this is another case of lack of fall moisture. However, these leaves were referred to Prof. H. L. Fawcett of the Citrus Experiment Station at Riverside, to determine the effect of shot hole or other fungus on the leaves. Prof. Fawcett says, "This fungus would not in my opinion be sufficient to cause the death of the tree." Last year was an exceptionally trying one on all deciduous orchards which were not fall irrigated.

Summer Pruning of Apricots

My apricot trees which are about 10 years old are set 20 feet apart each way but are so large and have so much foliage that they appear to be too crowded and I had thought of taking out every other row or every other tree in alternate rows to give them more room, but am wondering if summer pruning would not cure the trouble. So far have practiced only winter pruning and last year did not prune. The trees are loaded heavily but fruit is too small and shade too dense. Trees here make a very rapid growth.—Subscriber, Mesa, Arizona.

Apricot trees ten years of age should not require thinning to the extent of taking half the trees out. Of course one could intercrop the land and it would not be entirely waste, but at the same time the loss from removing vigorous young trees would not be made up in any intercrop. As to summer pruning this should have been done immediately after removal of the fruit, then it would have sent out growth of new wood and if plenty of water had been given would have set buds for next year. Unless the season is long this could not be accomplished. Again, if the trees had been loaded with fruit it would perhaps be wise to prune now and reduce the number of buds for next season's crop. The dense shade may be improved by winter pruning. However, your Arizona conditions require plenty of shade.

Walnut Questions

Would like to hear in the Cultivator of something to bleach walnuts. I also have a walnut tree that has very thin shells; some have holes in them. What causes this? Is it the nature of the tree?—Subscriber, Lompoc.

There has been no change in the method of bleaching walnuts by the chlorine process but it is scarcely practical for a small grower. The California Walnut Growers' Association bought all the rights to use the patented method but the patent has almost, if not quite expired. The best way is for all the walnut growers of a district to organize an association and have the sorting, grading, bleaching and other work done at a central packing house where it can be done much cheaper than at home.

There are often walnut trees in seedling orchards which produce nuts having thin, or perforated shells. This is more noticeable in some years than others but the cause has not been fully determined. Such shells are seldom found in the standard grafted varieties.—J. B. N.

Turkeys Have Chicken Pox

My turkeys' heads are covered with warty appearing lumps that will cover the whole head even onto their bills and eyelids till they cannot see to eat. Otherwise they do not seem sick and are as hearty as usual. I have some that stay around the premises and roost near the pigstye, and I thought it might be caused from unsanitary surroundings, but I have a flock of lovely ones that have never been near the others but live off in the corn and alfalfa field that are taking the same disease. The large and small are affected alike. I first noticed it on a year old gobbler. Will you please tell me the cause and cure, as I fear it will spread to them all. The gobbler was easily cured although very bad when I discovered him. I painted his head with iodine twice and the lumps dried up. Also gave him a dose of salts and isolated him from the others. But the smaller ones do not seem to respond to that treatment.—Subscriber, Madera.

Your turkeys have chicken pox, which seems to be quite prevalent this fall. It cannot be cured by external applications, though it is a good plan to rub the sores with carbolated vaseline. Neither can it be cured by internal remedies, for it has to run its course, but it can be relieved and the period shortened somewhat. Two remedies are in use for chicken pox, calcium sulphide and flour of sulphur. The calcium sulphide comes in tablets and cannot always be had in

proper strength. When it is fresh and strong, the dose is one grain daily for each bird. This is best given in the wet mash. Flour of sulphur is mixed in the dry mash for chickens, being made about five per cent of the mash. As your turkeys probably do not have a dry mash you can mix it into a moist mash of bran and sour milk. Dr. Sanborn prefers flour of sulphur because of the difficulty of getting calcium sulphide in sufficient strength. Give the dose once daily till there is improvement.

As chicken pox is very infectious the premises must be thoroughly cleaned after the epidemic has passed. If a single germ remains the young birds will have it again next year. At the University of California they have found a serum for inoculating fowls against chicken pox. It is probably too late for this to do you any good, but you might write them about it.—J. A .K.

Poultry House for 150 Hens

I am writing you in regard to a hen house to take care of about 150 White Leghorn laying hens. I am inclosing a cut of a type of house in use in the east and central states but I was wondering if it was necessary to build so large a house here. The dimensions of house in cut are 40x14 feet and it is supposed to house 100 Leghorns. —Subscriber, Campo.

The house in the cut referred to, which is of what is known as the Monitor type, is not as much used in California as the more simple gable roof with a long slope on one side and a short one on the other. Some put the short slope of the gable at the rear, and some put it in front. When it is in front and is prolonged two feet or so to make overhanging eaves, it gives such excellent protection from sun and rain that nothing more is needed. The front is entirely open except for wire and the feeding troughs and nests, which usually fill the lower three feet. Most commercial poultrymen house their birds in flocks of 150 or more. In a long house meant for say 600 birds, this would mean four sections each holding 150, and the sections are as nearly square as possible. For your flock of 150 birds a house 20x24 would be ample, since it allows over three feet per bird. The roosts and droppings board will occupy the rear half of the house, from about 2½ feet above the floor, but the entire floor is left open for the use of the fowls for scratching and exercising. An article on California Poultry Houses, with illustrations, will appear in the Cultivator soon and will answer your questions more in detai than is possible here.—J. A. K.

Bean Rust

Would you please tell us why the Pink beans rusted so badly this year? Does the White bean rust as bad as the Pink? Does the Blackeye bean sell as readily in the market as the Pink, and how does the price compare?—Sulphuret.

Rust is a fungous disease that is carried over from year to year and climatic conditions this year have been very favorable to its development. The method of control would be to begin spraying with Bordeaux mixture or lime-sulphur solution when the plants are six to eight inches high and continue spraying at intervals of two weeks until three or four applications have been put on. Rust is liable to attack any of the beans but the Pinks seem to be more susceptible than the White or Blackeye.

Locally the Pink beans sell a little more readily than Blackeye but for export trade the Blackeye is more in demand. In price they are nearly the same.—D. F. R.

Everybody is at Southern California Fair This Week

Riverside is the hostess. The wireless informs us that the show is good; the crowds are better; and the spirit of everybody is the best. More next week.

La Crosse Happy Farmer TRACTOR

FOR only $1075 you can have the greatest tractor ever built. It is the Happy Farmer.

Because of the thousands of Happy Farmer Tractors we are building and selling, we are able to buy the best materials in great quantities and at bottom prices. Every part of the Happy Farmer is made in our own plant by the most up-to-date labor-saving machinery.

The low price of $1075 is the direct result of the size and system of the great company which makes the Happy Farmer Tractor.

Simplicity of Design

The Happy Farmer has the simple, wide tread and perfectly balanced design, which does away with unnecessary weight and keeps down fuel cost.

The Happy Farmer is the one man tractor. Every working part can be reached without stooping. Thousands of satisfied Happy Farmer owners testify that it is the perfect kerosene burning tractor for every size farm. It is the tractor which is self-guiding in the furrow and which turns short in its own tracks in a space of less than nine feet.

The Happy Farmer is rated at 12-24 horsepower and is the tractor which can be made to act like horses and throw more power on either side when needed.

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Dealers are taking orders for the Happy Farmer Tractor now. We cannot guarantee to supply the demand unless orders are placed at once. There is a Happy Farmer distributor near you who holds Happy Farmer demonstrations from time to time. See the Happy Farmer at work and let it prove its leadership. Write us today for the name of nearest distributor who will let you know when the next demonstration is to be.

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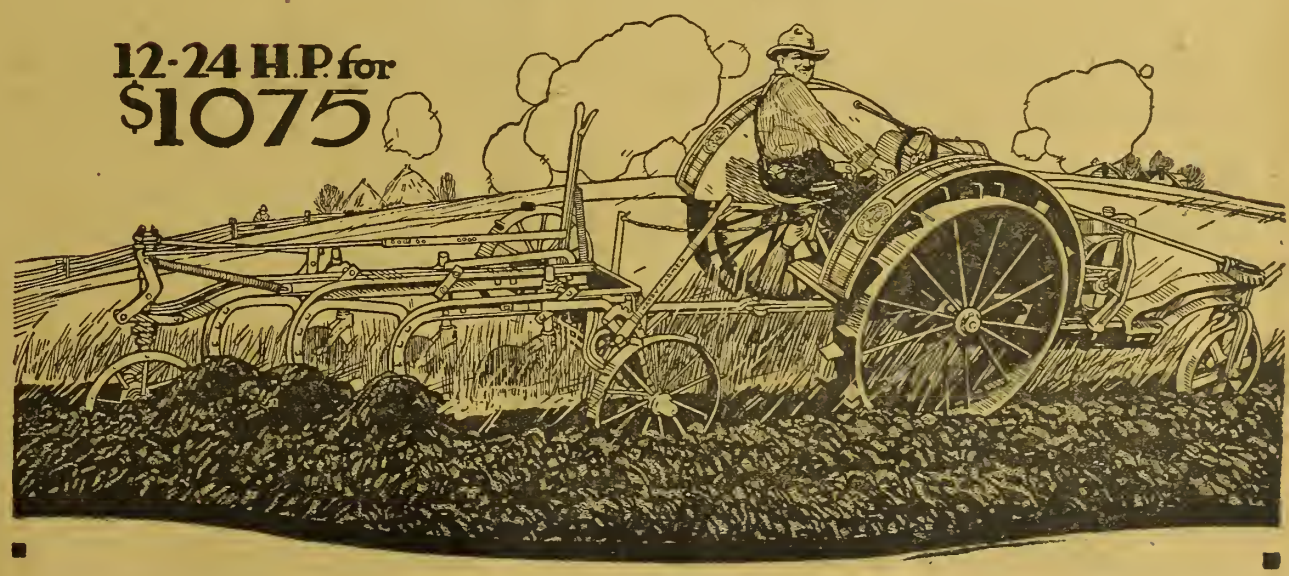

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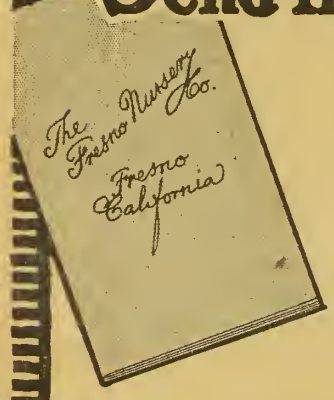


Every Horticulturist in the State will want our new Fruit Tree Catalog when published. Your name and address on a postal card sent now will assure you of a copy.

FRESNO Climatic conditions cannot be excelled for the production of well matured trees. *"FROM THE ROOTS UP"* is our motto. Commercial orchardists all over the State purchase our pedigreed trees because they give best results.

Place your orders now and have us reserve your stock. Do not forget to send your name and address and make sure of receiving an early copy of this year's catalogue and price list.

The Fresno Nursery Co.

P.O. Box 615 - C **Fresno, Calif.**

California Cultivator

Costs $1 per Year

Rooster or Capon, Which?

Written for California Cultivator By Jean A. Koethen

IN FEEDING high priced grain to capons you must remember that a capon will make two pounds of meat on the same or less feed than it takes to make one pound on a hen. That is, you can grow a ten pound capon on the same feed that it would take to produce a five pound hen or pullet of the same breed, in any of the American or English varieties. At the same time you can expect to get at least twice as much per pound for the capons as the average yearly price of hens." So says George Beuoy, the Kansas "Capon King." Doubtless what he says of prices is true in Kansas, but is it true in California?

Being in some doubt as to the answer to this question, I called up a leading poultry commission house in Los Angeles. "Capons?" he replied, "why, the capon industry in California cannot be called an industry at all. There is no demand to speak of. People here are not educated up to paying the price a capon must bring in order to pay for the long time he is fed. In the Middle West, where they have cheap feed, they can do it; here feed costs too much. Very few capons are used in Los Angeles. Some of the high class hotels and clubs use them and some Pasadena folks, but people here won't pay what they will pay in San Francisco and Eastern cities. We haven't got the right kind of sports, that's all.

Then he went on to tell me that the few dozen capons he handled last February sold for about 48 cents a pound dressed, while roasters sold for 33 cents, but the capons had been fed since spring of the previous year—almost a whole year—while the roasters, which were hatched probably in September, had been fed only five months. Was the extra 15 cents a pound worth seven months of feeding? This man says no, and I think all of us who have tried to raise market poultry on high priced feed will agree with him.

In the opinion of this commission man no market poultry pays as well as the good, substantial hen of one of the heavy breeds, that has paid for her raising with eggs. When she goes to market at the end of her first or her second, or it may be even her third season's laying, she brings from 25 to 35 cents a pound alive, and age makes no difference. What she brings as a market fowl ought to be clear profit, and if she weighs from six to eight pounds, as many of these hens will, the profit is a comfortable one. For some reason the Los Angeles public is partial to hens. They are not educated up to capons or even to a nice soft rooster, but they dote on a good plump hen.

There are reasons for caponizing, however, over and above the question of profit, and it is to some of these I wish to call attention.

In the first place, caponizing keeps a rooster from becoming tough as he grows older. Cockerels up to about six months of age, or until their spurs develop, are classed as soft roasters and bring a good price. As soon as their spurs are developed they begin to take on a tough and stringy quality, and a drop in price follows. If cockerels can be advantageously marketed before this time, well and good. If they are hatched late in the spring, however, they reach frying size in summer or early fall when fryers are cheap. If these late hatched cockerels can be kept soft and tender until January or February, and the additional feed does not eat up the additional profit, there may be an advantage in keeping them for market. Certainly it would be better to caponize surplus cockerels for home use than to sell at a loss what one could not use as fryers and roasters.

In the second place, capons are said to make the best of mothers. On a ranch where there are plenty of broody hens more mothers may not be needed, but when chicks are hatched artificially a capon mother, able to cover 25 or 30 chicks, would be very useful. The capon is said to be more watchful than a hen mother and more ready to defend his brood from hawks and crows, although "on account of his greater size, dignified and commanding bearing, tame, docile and affectionate disposition, and quick perception, he seldom ruffles a feather or is called upon to put up a defense."

(Continued next week.)

STORRS EGG LAYING CONTEST

Storrs, Connecticut, September 26, 1918. Report for the forty-seventh week ending September 25, 1918.

In the forty-seventh week of the egg laying contest at Storrs pen 73, White Leghorns entered by A. P. Robinson, Calverton, New York, tied with the "Oregons" for first honors, each pen having laid 50 eggs.

Bird 195 owned by Obed G. Knight of Bridgeton, Rhode Island, is still laying at her usual rate, having laid six eggs this week. She is now two eggs ahead of the best hen's yearly production of last year, which was 277 eggs. This bird has 35 days in which she has to lay 21 eggs to reach the 300 mark.

Though England has killed off much of its poultry and rationed what remains, the sportmanship of her people is shown in the fact that Miss N. H. Bell, of Ightham, Kent, England, has applied for admission of a pen of Leghorns in the contest that starts November 1.

The three best pens in each of the principal varieties are as follows:

Barred Plymouth Rocks

Richard Allen, 1854; Jules F. Francias, 1803; Tom J. Adamson, 1803.

White Wyandottes

Obed G. Knight, 1987; Brayman Farm, 1740; Mrs. R. W. Stevens, 1711.

Rhode Island Reds

Richard Allen, 1831; Pinecrest Orchards, 1686; Pequot Poultry Farm, 1542.

White Leghorns

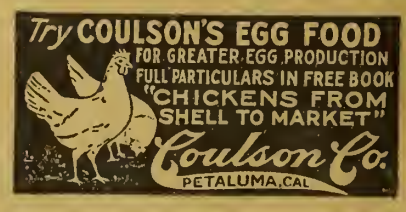
Hollywood Farm, 1940; Braeside Poultry Farm, 1912; J. O. LeFevre, 1888.

Miscellaneous

Oregon Agricutural College (Oregons), 2142; H. P. Cloyes, (Buff Wyandottes), 1686; Cook & Porter, (Buff Wyandottes), 1655.

People who can't stand prosperity won't have to stand it long.—Albany Journal.

Eggs all through the MOULT!
SHORTEN the moult and lengthen the laying. Globe A-1 Mash (dry buttermilk added) will do it. The live lactic acid bacilli in the dry buttermilk will keep your flock in glowing health: (bulletin 162 U. S. Agr. Exp. Sta., Berkeley).
For Hogs A-1 Hog Feed 10% dry buttermilk) will save from $6 to $12 on fattening each hog.
Fact Book for poultry and hog raisers sent free.
GLOBE MILLS
905 E. 3rd St., Los Angeles
Fact Book
A1 POULTRY FEED
Buttermilk GLOBE A-1 Dry Mash



Why Hens Won't Lay

P. J. Kelly, the Minnesota Poultry Expert, 120 Kelly Bldg., Minneapolis, Minn., has published a book, "The Tale of a Lazy Hen." It tells why the hens won't lay and how to make them lay every day. Mr. Kelly will mail the book free to anyone who will write him.

CHICKENS SICK? Roup, Cold, Canker, Bowel Complaint, Limberneck, Sorehead, etc. the best remedy is always GERMOZONE. At most dealers or 75c. postpaid with 5 book poultry library free.
GEO. H. LEE CO., Dept. 418 Omaha, Neb.

Since 1902

Pomona DUPLEX-PLUNGER Pumps

One Pump Will Do Your Work

Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

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Pomona "Made Right" Irrigation Gates and Valves

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Pomona Mfg. Co.
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Keep The Home Gardens Growing

Write for 25th Annual Seed Catalogue—School Garden Number, sent free on request.

NEW LOCATION

On or about October 21st we will move our retail, wholesale and mail order departments and general offices to 620 South Spring Streets, only one and one-half blocks from the Sixth Street Pacific Electric Depot.

Stock men should see our exhibit at the Liberty Fair.

Aggeler & Musser SEED Company
620 South Spring Los Angeles

Ziegler's Tractor Attachment

Adaptable To Any Auto

The Ziegler Attachment will do the Field work of 6 to 9 horses and is Geared 14¾ to 1, Developes 6 to 9 H. P. on average auto; 4 to 6 H. P. on Fords. Any auto operator can handle the tractor successfully.

Price $395, L. A.

Live Agents Wanted

Ziegler's Tractor Attachment
611 N. Western Ave. Los Angeles

FOLKS TO MAKE FAIRS

IT TAKES folks to make a fair. We talk of going to see pumpkins and squashes; hogs, sheep, horses and cattle; needlework and jellies; but at the same time, figured down to its last analysis, at least half of us go to see and be in the crowd and get the personal touch. Nor is this spirit other than commendable. Of course we always decry the getting together of great masses of people to see some spectacular event. Still, if the real object is to study agricultural problems or to learn how to do more effective work in any constructive line, let us continue to get together.

And speaking of folks, the possibility of getting in touch with the experts who come to judge of quality, and to hear their estimates of what constitutes quality, and to see the articles which are entering into competition gives swifter education than can be secured in any other way.

Such opportunities were never so plentiful as they have been this year. At the state fair it was many times remarked that the educational opportunities offered by the judges' expressions of their opinions and reasons for decisions were of inestimable value. District and county fairs have also offered similar opportunities.

Now comes the Liberty Fair, and there will be a great gathering of people. They will get in touch with some of the brightest experts judging the various classes.

For instance: One line of work by the committee on agriculture for this fair—which will be held in Los Angeles, October 12-26. This is a milk scoring contest. The premiums are only nominal, but it is understood there will be many entries in these classes.

For judges Prof. C. L. Roadhouse of the University of California and Dr. C. F. Hoyt of the dairy division of the United States department of agriculture, located at Salt Lake City, will come to Los Angeles, and their services will be available to every dairyman. They will be aided by the laboratories of the board of health of Los Angeles, and milk which is not strictly up to standard will soon be in a class by itself, for there will be some remarkable fine exhibits of milk from the dairies of Southern California, which supply to Los Angeles the purest milk which any city of its size has.

This exhibit will be in the northwest corner of the foods building, which is the permanent exposition building at Exposition Park.

The greater part of the exhibits which have been handled by the committee on agriculture will be, however, located in the agriculture and horticulture building. This is an attractive temporary building located just west of the permanent exposition building. In it will be feature exhibits of various counties and communities. These will be made up of both agricultural and horticultural products, but there is going to be far stronger competition for the $1575 in prizes than was anticipated.

There are being exhibited the "corn" of Egypt, in other words, various types of sorghums, wheat in variety, all other kinds of grain; beans, "57 varieties"; vegetables dried, vegetables canned; textiles; drug plants, but this is not the place for the premium list. There has been much hard work to secure representative exhibits.

But the largest exhibit, and the one which will attract most attention, which has come under the management of this committee, is that of farm power and farm implements. Acres will be covered by this exhibit, and in the present day of labor shortage, not only interest, but necessity, compels attention to these aids to farm work. Better than the exhibits of machinery will be the opportunity given for getting in personal touch with some of the best informed mechanics and power experts.

Liberty Fair, Los Angeles, October 12-26, will aid in greater production of better foods.

Changing the kind of wheat grown should be done only for the purpose of getting a proved better variety. It is often desirable to do this, provided it is proved beyond question that the new variety is better for that locality. So-called "new" varieties, extravagantly advertised at fancy prices, should be disregarded completely.

Jevne's Products
Famous in the East

Jevne's "35„ Coffee
Famous in the West

All her gifts Nature showered on California.

Her products grown in rich black soil, bathed in warming Westerly wind, kissed by the golden sun are the pride of this section.

Each year Jevne's ship East tons and tons of California's choice Fruits—dried and fancy packed.

As Jevne's California Products are famous in the East, so is Jevne's "35„ Coffee famous in the West.

All over Southern California, wherever you may go, Jevne's "35„ is a companion that will always greet you.

Drink this delicious blend of aromatic Coffee—ask your grocer for Jevne's "35„.

sold Everywhere

H. JEVNE CO.

LOS ANGELES

Calco Troughs

CALCO HOG TROUGHS are made for *hogs*—they satisfy hog manners and at the same time keep feeding conditions sanitary.

Calco Hog Troughs are light but extremely durable—they are strong and rigid. Cast iron legs provide anchorage and prevent over-turning. They are round bottom and made of *Armco* rust resisting iron.

Years of service make Calco Troughs a necessity.

Strong—sanitary—rigid and durable—all metal construction—low cost.

Diameter	Depth	Length	Price
10¼-in.	5 5-16-in.	24-in.	$2.95
10¼-in.	5 5-16-in.	40-in.	3.70
10¼-in.	5 5-16-in.	60-in.	4.50
14-in.	7 3-16-in	24-in.	4.55
14-in.	7 3-16-in	60-in.	6.55
14-in.	7 3-16-in	120-in.	9.60

Mark size wanted—state shipping directions—attach check or money order and mail. Immediate delivery. TRY ONE TROUGH. You'll buy more.

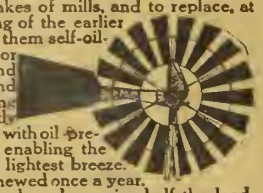
See Calco Products at Los Angeles Liberty Fair.

California Corrugated Culvert Co.
419 Leroy St., Los Angeles 408 Parker St., Berkeley

for Hogs

THE SELF-OILING WINDMILL

has become so popular in its first three years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aermotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load



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Headquarters for **IRRIGATION** Supplies
Pumps, Engines, Sprayers, Hoists Etc.
Catalog FREE on Request
Smith-Booth-Usher Co.
Los Angeles.

Milk From Diseased Udders Detrimental to Health

Milk from the udders of cows suffering from mastitis (commonly called caked bag, garget, etc.) should not be used for human food as some very troublesome diseases may arise from doing so, especially in children. Milk from udders or portions of udders so affected nearly always contain harmful bacteria which multiply with great rapidity when the milk is drawn and these organisms may be responsible for nausea, vomiting and even diarrhea in the consumer. Epidemics of septic sore throat in many instances have been traced to the milk supply having been contaminated by one or more cows in a herd which were suffering from mastitis. The pus present in milk from a mastitis udder may impart to the milk an unpleasant taste and the milk may curdle and putrefy within a few hours after being drawn. If ony one quarter of an udder is affected and a small top milking pail is used the milk from the healthy portions may be used. The diseased portion should then be milked into a separate vessel and boiled before being disposed of.—Wm. H. Feldman, Colorado Agricultural College.

Difficult Churning Not Due to Feed

Difficulty in churning is often experienced when only one cow is milked, and that one a stripper. It never occurs when using cream from fresh cows. The cream churns hard because it contains more curd than the fresh cow's milk, and the fat is harder. The trouble has no connection with failure to supply salt or with the character of the feed given the animal, says C. H. Eckles of the University of Missouri college of agriculture.

The first thing to do is to make certain the cream is not too thin and that the temperature is right. Having these conditions right does not always remedy the trouble. In bad cases there is no practical remedy, especially when the milk all comes from one cow. A cow that is producing milk giving rise to this trouble had better be dried up as soon as she has been in milk ten months or more. Adding cream from a fresh cow will generally cause the cream from both to churn if not too thin and the temperature is right.

CHILDREN FIRST

Railway dining cars are now doing some valuable advertising for dairymen. On every table may be found slips calling atention to the food values of milk and butter. For example, from one recently picked up on a Southern Pacific diner:

"Milk is one of the most important food sources the human race posesses. For the proper nourishment of the child, it is absolutely indispensable and its use should be kept up in the diet as long as possible. Not only does it contain all the essential food elements in the most available form for ready digestion, but the recent scientific discoveries show it to be especially rich in certain peculiar properties that alone render growth possible. This essential quality makes it also of special value in the sick room. In hospitals it has also been shown that the wounded recover more rapidly when they have milk.

"For the purpose of stimulating growth, and especially in children, butter fat and other constituents of milk have no substitutes. Therefore, every parent owes to himself and to his family the duty of providing re-

quisite amounts of milk, butter, cheese and other dairy products. During this last winter, when much agitation was had in some of the larger cities over the price of milk, which was advanced from two to three cents per quart by reason of the rapid rise in the cost of feed and labor, many families among the poor were found giving their children tea and coffee instead of milk. Such methods of feeding failed to nourish the child properly.

"The widest possible publicity should be carried on through public channels to bring these essential facts to the attention of all mothers.

"In spite of the shortage of milk in Germany, that country has at all hazards maintained the milk ration of the children and in the hospitals, even though to do so has meant that the adult population has had to forego largely its use. In a 'safety first' health campaign it must be remembered that it should be 'children first'.—United States Food Administration."

DON'T LET MILK SPOIL

In this time of need for food every effort should be made to prevent milk from spoiling. Cows should be kept clean and should be milked in clean surroundings into a small-top covered pail. All utensils which come into contact with the milk should be thoroughly sterilized with steam for at least five minutes, and milk should be cooled promptly at 50 degrees Fahrenheit or less and maintained at that temperature. Whenever these conditions are met, little milk will be wasted. In this time of terrible destruction of human life it is particularly necessary that milk be produced under such conditions as to insure a safe food for babies. This must be done by a decreasing number of men trained to do it. A great task and a great opportunity for dairymen are involved.

BETTER BREEDING HELPS

In dairying large production and profit go hand in hand. Breeding furnishes the most economical way to obtain large producing cows. The pure bred bull, with generations of high producing ancestors back of him, must be used for breeding, and only the best heifers from the best cows should be chosen to be the dams of the next generation.

Bargains in Holsteins

FACT NO. 1—A. W. Morris & Sons Corporation, Woodland, Cal., have developed a herd of registered Holsteins that by sheer merit both in production records and show ring records has become known throughout the whole world as one of the greatest herds of the breed, and in some respects as the greatest herd of dairy cattle of any breed ever owned and developed by one firm on one farm.

FACT NO. 2—Of the five herd bulls in service in the Morris herd, every one of them has sired a world's record daughter or has for a dam a cow that made one or more world's records. No other herd in the world, using five herd bulls, can equal this.

FACT NO. 3—In this sale A. W. Morris & Sons Corporation will sell many of the tremendous producers that have helped to make their fame world wide, and these great females are in calf to one or the other of the five master herd bulls.

FACT NO. 4 — The Morrises are retaining in their herd the daughters of these splendid cows, and they will be developed to their fullest capacity. Remember then that the calves these cows are carrying are brothers and sisters to the heifers upon which the Morris company are centering their whole breeding effort and skill.

FACT NO. 5—Every animal in this sale is positively guaranteed to be a breeder. We who have had an opportunity to observe the Morris methods at close range, know what a Morris guarantee means, and know well their firmly rooted policy of giving those who buy from them an absolutely square deal, even to the benefit of a doubt.

FACT NO. 6—In spite of the fact that world famous cows, daughters of world famous sires and dams, bred to the greatest combination of herd bulls on earth, will be sold in this sale, the sellers expect only modest prices to prevail. They instruct us to be perfectly frank in our announcements of this sale, emphasizing the fact that some of the most noted cows are along in years, that some have lost quarters, and that no animal in this sale will be tuberculin tested, but that regardless of what you bid on any animal in this sale, every single one will be sold to the highest bidder absolutely without reserve or limit.

90 Registered Cows
15 Registered Bulls
At Public Auction for
A. W. Morris & Sons Corporation
Woodland, California
Tuesday, November 12, 1918

DAUGHTERS OF THESE SIRES: Prince Gelsche Walker; Segis Pontiac De Kol Burke; De Kol Hengerveld Burke; Alcartra Polkadot Corrector; Ignaro De Kol; De Kol Burke; Juliana King of Riverside; Aaggie Cornucopia Johanna Lad; King Mead of Riverside; Aralia King; Buffalo Skylark Ames; Colantha Sir Pontiac Aaggie; De Kol Spofford Promise; Woodcroft Pontiac Korndyke; Tilly Alcartra Son; King Pontiac Ruby Burke; and other noted sires.

BRED TO THESE BULLS: Prince Gelsche Walker; King Mead of Riverside; Sir Aaggie De Kol Acme; King Morco Alcartra; Segis Pontiac De Kol Burke; King Korndyke Pontiac 20th; EVERY ONE OF WHICH HAS SIRED A WORLD'S RECORD DAUGHTER OR HAS FOR A DAM A COW THAT MADE ONE OR MORE WORLD'S RECORDS.

THIRTY COWS WITH YEARLY RECORDS up to over 24,000 pounds milk and over 1000 pounds butter are in this sale, the largest number of yearly record cows ever offered in any sale in the world—and just consider that they all are in one herd.

THREE COWS WITH RECORDS from 30 to over 33 pounds butter in seven days.

THIRTY-FIVE COWS WITH RECORDS from 20 to 29.87 pounds butter in seven days.

TWENTY-FIVE FRESH COWS, tremendous producers and wonderfully well bred.

Every animal sold is positively guaranteed to be a breeder.

No animal in this sale is tuberculin tested.

Catalog now in preparation. Write for one.

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Auctioneers: Col. Ben A. Rhoades, Col. Cy N. Clark

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Registered Herd **Unregistered Herds**
800 Cows and 50 Bulls Best of Breeding Show Winners. 4000 Head Both Sexes Same Breeding as Registered Herd
All stock guaranteed as represented. Write for terms and particulars. We offer for immediate delivery, 200 two year old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.
Scharbaur & Eidson, Midland, Texas **Elevation 3000 Feet**

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Anoakia Breeding Farm

Arabian-Thoroughbreds

Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion, and Don Castano, five gaited saddle stallion, winner in many prominent shows.

Mammoth Jacks

We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

Poland China and Berkshire Boars

Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

Correspondence Invited

Anita M. Baldwin

Santa Anita - Calif.

W. H. Taylor, Supt.

SAFETY

We believe our conditions of sale are as definite and favorable to the buyer as it is possible to make conditions covering anything as variable and flexible as living animals.

Safe sales are good for the buyer and best for the seller in the long run.

We accept high class registered animals in our consignment sales, or will sell your whole herd. Write us.

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Mgr.

Sacramento - Cal.

Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 126982, Grand Champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Bldg., San Francisco

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Prize Winning Berkshires

Two High Class Jr. Boars, choice $65.00. Six Fall Boars, choice $50.00.

Sired by Ames Rival.

F. P. Hall Perris, Cal.

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Senior Herd Sire Juliana De Kol King Segis, Grand Champion Kings County Fair.

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A. B. COMFORT - Guernsey, Cal.

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Sizes 2 to 30H-P.--Select Your Own Terms -- Direct-from-Factory prices. Write your own order--Save $15 to $200. Prompt Shipment. Big new catalog, "How to Judge Engines" FREE-- by return mail, Postpaid.

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If you have the best silo it is the Simplex—an all one piece stave silo.

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Pure Bred Stock Sales a Specialty

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GREAT WAR LOANS

The following are the greatest war loans made by various belligerent nations:

British victory loan early in 1917, five per cent. Total subscriptions, $5,096,245,320.

United States Second Liberty Loan, four per cent. Total subscriptions, $4,616,000,000.

Eighth German war loan, 4½ per cent and five per cent. Total subscriptions, $3,600,000,000.

French war loan of 1915, five per cent. Total subscriptions, $2,261,864,409.

Austrian seventh war loan, five per cent. Total subscriptions, $1,150,000,000.

Italian fourth war loan, five per

cent. Total subscriptions, $1,000,00,000.

Hungary seventh war loan, six per cent. Total subscriptions, $600,000,000.

Canadian victory loan, November, 1917, 5½ per cent. Total subscriptions, $418,000,000.

PLATFORM OF THE LEAGUE TO ENFORCE PEACE

We declare that it is the supreme task of the civilized world to crush the insolent attempt of German autocracy to substitute a military dictatorship for self government and the right of independent thought. The world must be made safe for democracy by the defeat of German militarism. We want no peace without victory, and we demand victory so complete and conclusive that military ambition will be forever silenced and a peace secured that will make an end of war. The world must be kept safe by the coperation of the major force of mankind, and that force should be organized by a league of nations to keep the peace of the world. And we favor the entrance of the United States, after the war, into such a league of nations as may be adequate to safeguard the peace that must be won by the joint military forces of the Allied nations.

"SPY AND PAID LIAR"

Here is a personal message to you straight from the front. It is reprinted from "The Stars and Stripes," the paper that is written and printed by members of the American Expeditionary Force in France—the men in the trenches—with the approval of General Pershing:

"Beware of the man who, no matter what his uniform, no matter what his nationality, comes to you with tales of Germany's invincibility, prophesies that 'the war will end in a draw,' and so forth. If he is saying such things

on his own account, he is a German propagandist, a spy, a paid liar, and should be reported and punished as such. If he is repeating them secondhand, he is nothing but an ass, a dupe of some real propagandist, and he should be reported and punished just the same."

UNITED STATES SUGAR OUTLOOK

Need for additional sugar conservation in the United States is reflected by estimates of our domestic beet sugar crop this year. After securing and averaging estimates from the three most trustworthy sources available the food administration finds a probable decrease in domestic beet sugar production of 5.2 per cent compared with last year. This represents about 38,174 tons of sugar less than in 1917.

CALIFORNIA INTERNATIONAL LIVESTOCK SHOW

SAN FRANCISCO

NOV. 2-10, 1918

Largest Exclusive Livestock Show ever held on the Pacific Coast. $38,000 in Premiums.

THE HORSE SHOW ALONE WILL BE WORTH THE TRIP. Daily Exhibitions by the highest class of horses ever seen on the Pacific Coast.

Other Special Features: Poultry and Pet Stock Show, Band Concerts, Livestock Parades, Military Spectacles. Every possible comfort for Exhibits, Exhibitors and Spectators. Special low railroad rates from all points. You'll be welcome!

For detailed information write Joseph E. Painter, Manager. 1205 Merchants Exchange Building, San Francisco. (5)

Buy Liberty Bonds

and then

Buy Registered Holsteins

so that you can

Buy More Liberty Bonds

That's the best advice you ever received. HOLSTEINS and PROSPERITY go hand in hand, and you can't beat PROSPERITY backed up by PATRIOTISM.

Buy the Holsteins

in the

Second Modesto Sale

Modesto, California, Thursday, October, 17, 1918

There will be more high record show cows, more sons and daughters of high record sires and dams, and more high class cows and heifers bred to 29, 30 and 40 pound bulls, than were ever offered before in a single sale in the San Joaquin Valley.

Contributors:

J. S. Gibson Co., Williams. Luther Thompson, Modesto.
J. M. Campbell, Escalon. C. G. Outland, Modesto.
R. L. Holmes, Modesto. Bridgford Co., Knightsen.

Look at these!

A 27.86 POUND SHOW COW! A 23.06 POUND FOUR YEAR OLD SHOW HEIFER! A 25 POUND COW THAT MADE 814.23 POUNDS BUTTER IN ONE YEAR! A 24.38 POUND COW BRED TO A 30 POUND BULL! A GOOD DAUGHTER OF PRINCE GELSCHE WALKER! A HEIFER WHOSE FOUR NEAREST DAMS AVERAGE 33.80 POUNDS BUTTER IN SEVEN DAYS! ! ! TWELVE DAUGHTERS OF HERMANA IGNARO, WHO IS BY A SON OF IGNARO DE KOL, THE ONLY BULL WITH NINE DAUGHTERS ABOVE 20,000 POUNDS OF MILK IN ONE YEAR! A 20 POUND COW THAT MADE 644.09 POUNDS BUTTER IN 320 DAYS, BRED TO PRINCE ALCARTRA KORNDYKE, SON OF TILLY ALCARTRA!

and Look at these Bulls!

HUBBAVALE ARTIS TWISK NETHERLAND, BY A 31 POUND SIRE AND OUT OF A 30.27 POUND DAM! SIR CHIMACUM WAYNE WOODCREST, BY A SON OF CHIMACUM WAYNE BOON AND OUT OF A 29.81 POUND JUNIOR THREE YEAR OLD! KING SEGIS ABBEKERK SARCASTIC, OUT OF THE SAME 29.81 POUND JUNIOR THREE YEAR OLD AND SIRED BY KING SEGIS ALCARTRA ABBEKERK, 30 POUND SON OF THE $50,000 BULL! SEGIS PONTIAC DE KOL BURKE WALKER, BY SEGIS PONTIAC DE KOL BURKE, AND OUT OF A 25 POUND THREE-QUARTERS SISTER OF PRINCE GELSCHE WALKER! OTHER SPLENDID BULLS THAT ARE BOUND TO SELL AT PRICES THAT WILL PLEASE OWNERS OF GRADE HERDS!

Every animal guaranteed to be a breeder, every animal over six months of age tuberculin tested and sold subject to tuberculin retest.

Catalog in preparation. Write for one.

MANAGEMENT

California Breeders Sales and Pedigree Company

J. M. Henderson, Jr., President C. L. Hughes, Sales Manager

Sacramento, California.

Auctioneers—Col. Ben A. Rhoades; Col. Cy N. Clark.

Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY IT MAKES THEM FAT

Hauser Packing Co. Los Angeles

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Grand Champion Herd

—OF—

Hampshires

I have for sale on my ranch in Boquet Canyon, some excellent bred sows and open gilts, and also some weanling pigs. The bred sows and gilts are mated to Director, Jr., Grand Champion boar at Sacramento, Cal., 1918, Malays Controller, first prize Junior Yearling Boar, 1918. The pigs are sired by Director, the sire of my Grand Champion boar, Director, Jr., who is only a March pig, an extraordinary occurrence. This young boar has been pronounced by those who have seen him to be one of exceptionally fine quality and his breeding is surpassed by none. You could not do better than to get a sow or gilt bred to him.

Visitors are always welcome at my ranch where the best stock is for sale at all times.

Be sure to see my exhibit at the Liberty Fair.

L. A. Denker

Saugus **Calif.**

FOR SALE
Cherry Model 1st

Sired by Grand Golden Model. **Dam Cherry Blossom.**

He is eighteen months old, deep cherry color; has the bone, size and form of a winner. If you are interested in Durocs and want a first class boar at the right price to head your herd, it will pay you to investigate. Address

Ed. Hunter, El Toro, Cal.

JACK LONDON RANCH

Rose Lawn Choice 408816
Won
4 Firsts, 4 Senior Champions,
4 Reserve Champions

Shorthorns **Shire Horses**
and Duroc Jersey Hogs

FOR SALE

We have entered five head in the sale at the California Stock Show, November 7 at San Francisco.

Eliza Shepard, Manager
Walter D. Bunnell, Herdsman
Glen Ellen, Cal.

Innisfail Farm

—of—

Suisun, Cal.

will exhibit fifteen head of Milking Shorthorns, all prize winners at the State Fair.

Come and See us at the Liberty Fair

Fresno District Fair

Written for California Cultivator by R. P. Royce

IT WAS hardly to be expected that the twelfth annual Fresno District Fair would register any substantial increase either in point of exhibits or attendance over last year. California is in the war and Fresno County is too. Naturally war conditions had their effect on the show, but in spite of the war, shortage of labor and the early rains the annual exhibit of the Fresno district proved to be just about "the biggest little fair" held in California this year.

Rains during the first two days militated against the attendance. Considerable fruit was on the trays and more or less alfalfa had to be taken care of. Clearing skies the latter part of the week brought out the crowds, and on Friday the grounds were jammed with visitors.

The agricultural and fruit exhibits were very attractive and quite complete. The county farm bureau and the farm centers of Kerman, Selma, Reedley and Clovis were largely responsible for the showing made in field and orchard products.

A particularly good exhibit of tractors was made up by the following companies: Lauson, Best, Holt, Samson, Yuba, Bean, Fageol, Avery, Fitch, Case, Moline, Monarch, International, L. A. Auto Tractor, Staude, Emerson, Bear Cat, Fordson and Beeman.

The general display of tractors, trucks, automobiles and farm machinery would have been highly creditable for a fair of much larger proportions.

Harness racing was practically eliminated, a fact that held very little encouragement to those who in the past have protested that "people went to see the races instead of pigs and pumpkins." There is a wide movement throughout the country towards eliminating racing at county fairs, but it is the writer's opinion that most fair managers could begin the elimination with a different feature. Just why good clean racing should be discouraged and side shows and carnivals permitted is rather hard to understand. Surely the usual string of fakirs, "curiosities," monstrosities and bally-hoos can be dispensed with to better advantage than racing. Again, it would seem that the general culture of the community is not greatly improved by placing a ban on races and yet permitting the usual rodeo features necessitating the "busting" of a lot of old horses, showing plainly their service under the saddle. Perhaps the other features will some day be eliminated. Let us hope so. A motto adopted by a little county fair in the Middle West should have wider application: "A Fair for Farmers—not Fakirs."

The entries in the live stock division held up remarkably well. The show of horses and mules was hardly creditable, but the hog and dairy cattle divisions staged excellent shows. The sheep department was also quite well filled—nearly 100 head being on exhibit.

Only one herd of beef cattle was in the stalls.

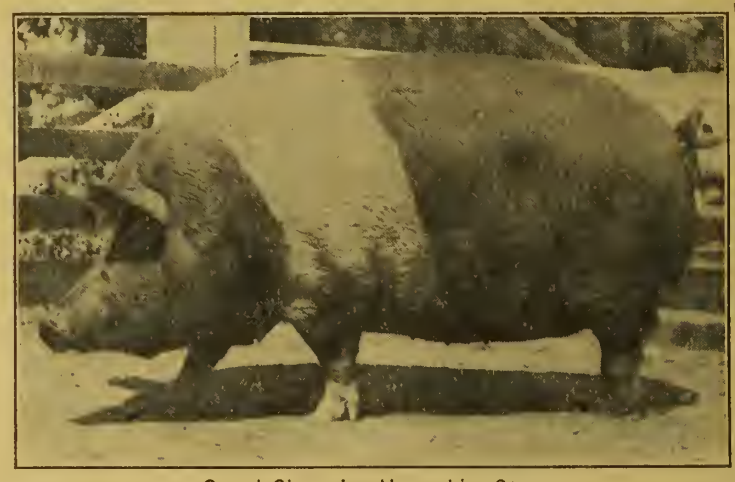
HOLSTEIN SHOW

Holsteins from the herds of Higdon, Vogel, Phillips and Helm came before E. W. Major for rating. The Higdon entries got away with most of the higher placings, but the Vogel two-year-old bull, Crown Prince Segis 25th, landed first place over Higdon's King Korndyke Pontiac 20th, that was second in class at Sacramento with the Fresno winner in fourth. The decision was close but the judge preferred the stronger top, neater tail head and better handling qualities of the Vogel bull to the splendid fronted Korndyke Pontiac 20th, who was carrying a bit more meat and a thicker hide.

Phillips had the only entry in the aged bull class.

The two senior yearlings did not make a particularly strong show.

The senior bull calf class was headed by Higdon's Model Bonnie Fobes De Kol. This very atractive youngster is so nicely fronted, so full of quality and possesses such excellent handling qualities that he was later made junior and grand champion.



Grand Champion Hampshire Sow

Elmira, who was queen at the state fair and will be one of the Conejo bunch at the California Liberty Fair.

The junior bull calves were topped with Higdon's state fair winner.

Higdon's aged cow, Model Bonnie Echo, had everything her own way right through to the championship. The Phillips cow looked a bit too old.

Higdon took first place in the two-year-old class over two entries of Vogel's. Some might criticise the winner for being a trifle meaty but her good middle and nicely balanced udder rather offset that objection. The second cow was perhaps stronger in her top, but she was hardly large enough and lacked udder development.

In the junior yearling class Vogel's entry stood between Higdon's two.

Calf Enemies

WHITE SCOURS
BLACKLEG

Your Veterinarian can stamp them out with **Cutter's** Anti-Calf Scour Serum and **Cutter's Germ Free** Blackleg Filtrate and Aggressin, or **Cutter's** Blackleg Pills.

Ask him about them. If he hasn't **our** literature, write to us for information on these products.

The Cutter Laboratory
Berkeley, Cal., or Chicago, Ill.
"The Laboratory That Knows How"

15,000 to 30,000 Pounds of Milk

Seventy-seven cows have been admitted to the Holstein-Friesian Advanced Register that have produced 7,000 to 15,000 quarts of milk in periods of ten months to a year. The capacity of the Holstein cow for milk is a matter of extraordinary interest.

If interested in

HOLSTEIN CATTLE

Send for our booklets—they contain much valuable information.

HOLSTEIN-FRIESIAN ASSOCIATION OF AMERICA, Box 120 Brattleboro, Vt.

The winner, who was afterwards made junior champion, is by the same bull that sired the grand champion bull and is quite like him—showing a lot of quality and breed type.

The senior and junior heifer calves were quite nice but not outstanding.

The Higdon entries made a clean sweep in the group classes. Phillips was second in the aged herd, second on produce of dam and third on get of sire. Vogel stood second with his calf herd.

The awards:

Aged Bull—1, Segis Pontiac Mead, Phillips.

Bull, two-year-old and under three—1, Crown Prince Segis 24th, Vogel. 2, King Korndyke Pontiac 20th, Higdon.

Bull, senior yearling—1, Fidelia Prince Newtonia. Vogel, 2, F. M. Helm.

Senior bull calf—1 and 2, Model Bonnie Fobes De Kol Spofford Pontiac, Higdon. 3, Count Pietertje Ormsby Burke, Phillips.

Junior bull calf—1, Higdon. 2, Vogel. 3, Phillips.

Aged cow—1, Model Bonnie Echo, Higdon. 2 and 3, Phillips.

Cows, two-year-old and under three—1, Owen Pontiac Burke, Higdon. 2 and 3, Margaret Aurelia Burke, Kathleen La Verne, Vogel.

Junior yearling heifer—1 and 3, Fay Tritomia Hengerveld Walker, Trout Brook Pontiac Walker, Higdon. 2, Westlawn Cream Mechthilde, Vogel.

Senior heifer calf—1 and 3, Miss Bracelet Fobes Korndyke, Pearl Pet Walker, Higdon. 2, Leola Lifretta, Vogel.

Junior heifer calf—1 and 3, Miss Tulare Champion, Miss Segis Alcartra Prilly, Higdon. 2, Easter Bonnet, Vogel.

Senior champion bull—Segis Pontiac Mead, Phillips.

Junior champion bull—Model Bonnie Fobes De Kol, Higdon.

Grand champion bull—Model Bonnie Fobes De Kol, Higdon.

Senior champion cow—Model Bonnie Echo, Higdon.

Junior champion—Fay Tritomia Hengerveld Walker, Higdon.

Grand champion cow or heifer—Model Bonnie Echo, Higdon.

Aged herd—1, Higdon. 2, Phillips.

Calf herd—1, Higdon. 2, Vogel.

Produce of dam—1, Produce of Jewell Queen, Higdon. 2, Phillips.

Get of sire—1 and 2, Get of Mutual Fobes Longfield De Kol, Get of Prince Riverside Walker, Higdon. 3, Phillips.

JERSEY SHOW

J. E. Thorp of Lockeford and Guy H. Miller of Modesto staged the Jersey show and divided honors fairly equally.

Bulls

The aged bull class was easily won by Miller on Altama's Interest, the Sacramento champion. However he did not have easy going all the way, as the two-year-old, Jolly's Senator Raleigh, gave him a real tussle for the senior championship. This bull is coming on and might be "bad medicine" next year.

Thorp had the only entry in the senior yearling class and Miller showed the only junior yearling. Miller won both the calf classes.

The Females

The three aged cows kept their state ratings, Salome of Mossdale winning, with Goldie of Venadera standing ahead of Valet's Golden Biddy. Miller showed a very good two-year-old, Angela of Venadera. The senior yearling class was hardly up to the average, both the Thorpe entries being quite a little undersized. Lucille of Venadera, owned by Miller, won and was later made junior champion. Miller was first and second on junior yearlings. Thorp was first on senior and junior heifer calves.

Thorp had the winning aged herd. In the group was one entry not shown in the open class. Miller's good young stuff won the young herd and calf herd. Thorp won first on the produce of Violet of Sunnybrook and first on the get of King's Valet.

The Thorp herd also won the "Dairy Special"—a very unusual class. This class called for one bull three years old or over; one bull under three years; four cows over three and four under three.

The awards:

Aged bull—1, Altama's Interest, Miller. 2, Imp. of L, Thorpe.

Continued on Page 375

Eighteenth Semi-Annual

HOLSTEIN

Consignment Sale

At Lake Mills, Wis., Oct. 22 and 23

A Two Day Sale of Remarkable Holsteins. Some of the Best Cattle ever offered in the Lake Mills Sale.

The Best Bred The Highest Record The Most Valuable

Including the Absolute Dispersal of the F. Lee Norton Herd, of Racine, Wisconsin, 60 head of choice cattle sold because the Farm Manager "enters the service." Twenty-one A. R. O. cows with records to 30 pounds. A fine 27 pound five year old bred to "The King," a wonderful 31 pound daughter of King Segis Champion, and bred to King Valdessa Pontiac, the 41 pound bull.

Herd headed by a fine two year old, King Alcartra Pontiac Snowball, a 33 pound grandson of the $50,000 bull, King Segis Pontiac Alcartra. He will be sold, and is a Prize.

Other offerings include:

A beautiful 34 pound heifer, whose dam, granddam, and sire's dam all have two 30 pound records, and whose dam has every prospect of making a much larger record this Fall. A pair of twin heifers, perfect individuals, grand daughters of King Segis Pontiac Alcartra and from a 30.16 pound dam.

Show cattle, both sexes. Prize Winners at the Fairs.

Some Classy Young Sires.

A 33.69 pound yearling from a 34.59 pound son of Sir Pietertje Ormsby Mercedes.

A son of King Segis Pontiac from a 27 pound two year old.

A 31.77 pound son of Mutual Fobes Longfield De Kol.

A 28 pound son of Sir Korndyke Bess Pietertje.

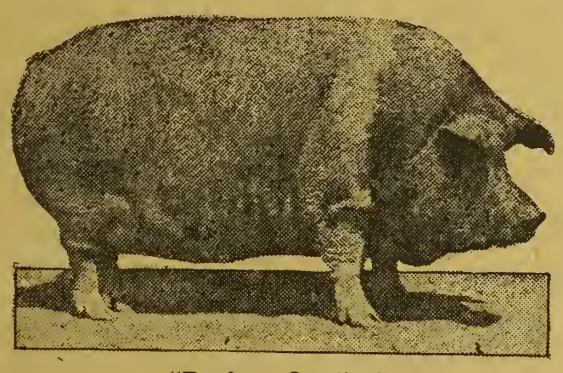
A grandson of Johanna McKinley Segis, from a 31.05 pound daughter of King Pontiac Champion.

Auctioneers: Haeger, Kelly and Mack. *S. T. Wood in the Box.*

Write for Catalog to

Frank H. Everson, Mgr. - Lake Mills, Wis.

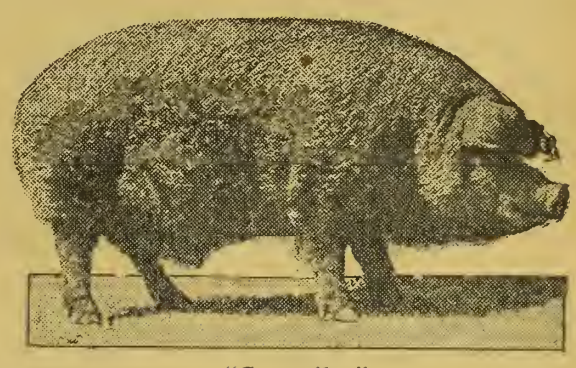
Hampshires—Durocs



"Perfect Quality"
Grand Champion sow, Hampshire, California State Fair, 1918, Conejo Ranch herd.

Conejo Ranch pure-bred Hampshires and Durocs captured 42 ribbons at the 1917 California State Fair, mostly championships, firsts, seconds and third prizes.

Read the 1918 winnings.



"Councilor"
Reserve Grand Champion boar, California State Fair, 1918. Duroc-Jersey, Conejo Ranch herd.

Hampshires

At the 1918 California State Fair the Conejo Ranch Hampshires won Grand Champion Sow, Senior Champion Sow, Junior Champion and Reserve Grand Champion Sow and Reserve Champion Boar and Reserve Junior Champion Boar—a record of 37 ribbons, mostly first, second and third prizes. Also first prize for herd over one year. First for Herd Bred by Exhibitor and first, Get of Sire.

Duroc-Jerseys

The 1918 exhibit of Conejo Ranch Duroc-Jerseys broke all records, winning 23 ribbons, including Grand and Reserve Grand Champion Boar and Senior Champion and Reserve Senior Champion Boar, Reserve Senior and Reserve Grand Champion Sow and many firsts, seconds and thirds, besides first prize for herd over one year, and first and second prize, Get of Sire.

These high-class animals will be exhibited at the California Liberty Fair for the entire two weeks, Los Angeles, October 12th to 26th.

We are Breeders of the Highest Class Animals for Sales Purposes and Offer Any of This Pure-Bred Stock at Reasonable Prices

Ranch located on Ventura State Highway, 40 miles northwest of Los Angeles.

CONEJO RANCH

Address Newbury Park, Ventura County, Cal.

Los Angeles office —Janss Investment Co., fourth floor Metropolitan Building, Fifth and Broadway.

Buy That Bull

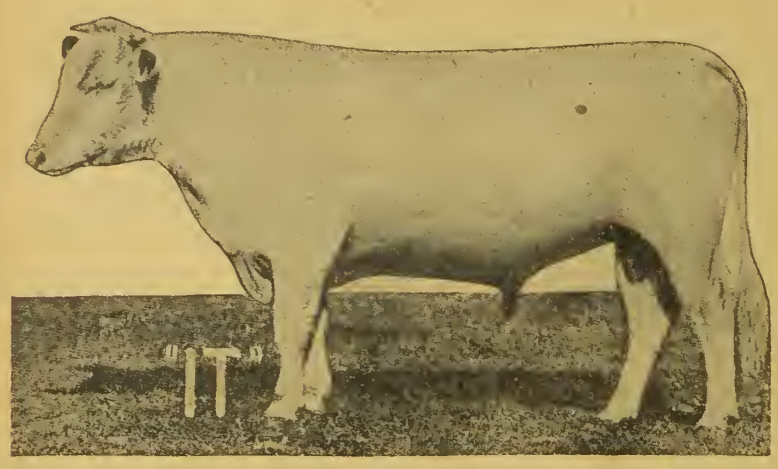
AT THE

California Liberty Fair

Los Angeles **Oct. 12 to 26**

SONS of Our Great Herd Sire "IT"

Will Be Shown and Offered for Sale.



SIRE: Pieterje Maid Ormsby, Butter 7 days 35.55
DAM: Pontiac Clothilde De Kol 2nd, Butter 7 days 37.21

Just consider that "IT" is from the greatest cow of all time—so recognized by leading breeders—and that her grandsons will put that high per cent butterfat test in your herd that you are looking for.

Take one of these youngsters over. They are the "real stuff."

McAlister & Son

Chino **California**

Come to Stanislaus County for Registered Holsteins

STANISLAUS COUNTY LEADS

All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

Segis Pontiac De Kol Dutch
Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. E. E. Freeman. Rt. B. Modesto

HOLMES STOCK FARM
Registered Holsteins of best breeding. Young bulls for sale.
R. L. Holmes Modesto, Cal.

When you buy why not buy the best? We have it in Stanislaus.

Thompson's Registered Holsteins
Young bull calves for sale with yearly record backing.
Luther Thompson, Rt. A, Box 351, Modesto Cal.

Our Senior Herd Sire is KING KORNDYKE HENGERVELD ORMSBY 7th
Five of his sisters sold at public auction for $23,800, an average of $4760.
This blood has made some of the world's greatest producers.
Our junior herd sire is TOYON KING KORNDYKE SOLDENE, son of a 33.23 pound daughter of King Hengerveld Aaggie Fayne.
Young bulls for sale. No females.
REGISTERED BERKSHIRE BOARS, sons of the $1500 boar Star Leader, for sale.
Kounias Registered Stock Farms, Modesto, Cal.

Hollow-Hill Farm Guernseys

On account of his close relationship to the balance of our herd we are going to sell our JUNIOR HERD SIRE, the four year old bull

Cora's Glen 31541

Grand Champion at Riverside County Fair in 1916

His sire is an A. R. bull which has two A. R. daughters.
His dam has an A. R. record of 12,286.3 pounds of milk and 676.31 pounds of butter fat, average 5.5 per cent, made at ten years of age.
He combines the blood lines of many of the great members of the breed and traces 25 per cent to Imp. Masher's Galore and 12½ per cent to Governor of the Chene.
He is a show bull and is backed up by production records. Inquire of

Hollow-Hill Farm, Colton, Cal.

Bull calves at reasonable prices.

HEREFORDS

A large herd of selected stock to choose from.
Everything sold is guaranteed as represented.
Why send East for breeding stock when we can supply your needs?
Save time and money by writing us for particulars.

Cottrell & Packard, Tempe, Arizona

Members Pacific Coast Hereford Breeders Association

Better service is assured by the advertiser if when writing you mention the California Cultivator.

Northern California Livestock Notes

Written for California Cultivator By W. S. Guilford

SWINE BREEDERS ORGANIZE

AT A meeting held at Orland September 28, the Glenn County unit of the California Swine Breeders' Association was organized. This is the first county unit to be formed in the state.

The Glenn County unit will work with the Glenn County farm bureau in every way for the good of the industry—and the president and chairman of the board of directors is a member of the board of directors of the farm bureau organization.

The first thing to be done by the Glenn County unit is to secure a large membership for the association.

Officers of the Glenn County unit are as follows: Wm. Durbrow, Willows, president; D. A. Shelloe, Glenn, vice president; Mrs. E. A. Hardy, Anchorage Berkshire Farm, Orland, secretary-treasurer. Executive committee: Wm. Wyler, Glenn; Geo. Ellis, Willows; Jas. Mills, Hamilton City; S. J. Yates, Orland; C. N. Slocum, Willows; W. W. Foster, Butte City; and H. E. Watson, Orland.

A BIG AGRICULTURAL EXHIBIT

Horticultural Commissioner Hugh Wren believes in taking time by the forelock. He is preparing now for the agricultural and horticultural exhibit at the Glenn County fair at Orland.

During fair week he had a blank form on which all who are growing crops that should be exhibited could sign. As horticultural commissioner, he will give every assistance possible in the growing, spraying and treatment of these crops during the year, so that they may be the best that can be grown.

He is interesting growers of dried fruit and nuts to prepare their exhibits now—from the best of the 1918 crop for 1919—because the fair is held too early to allow these exhibits to be put up in the best form from the 1919 crops.

While the 1918 fruit and grain show at Orland was splendid the 1919 exhibit will be one worth going many miles to see.

FAIR JUDGING PROGRAMS

About two weeks before the Minnesota State Fair this year, the judging program of the swine department was mailed to every hog breeder in the state. Then the judging of the various breeds and classes started promptly as advertised—and there was a large attendance of interested people.

This is a plan that can well be followed by all fair managements.

FALL FEED

As a result of the early September rains and the warm, showery weather that has followed there is green feed everywhere and great rejoicing among stock men.

Sheep and cattle should go into the winter in fine condition and good calf and lamb crops result.

Making Hogs Pay

The following advice is given in an article by Dr. R. H. Williams, Animal husbandman of the University of Arizona:

The hog business has had serious set-backs during the past year on account of the market price of hogs not having gone up in proportion to the cost of producing them. In spite of the present difficulties, it is believed that hogs may be raised to advantage by farmers. To do this these animals must be maintained in relatively small numbers on farms where there is considerable waste, such as skim milk, spoiled fruits and vegetables, grain fields to glean, and unmarketable grains. Hogs should pay a handsome profit if handled in this way. Some points of vital importance for hog raisers in Arizona may be mentioned as follows:

1. Do not over-stock, but keep a few hogs, perhaps one brood sow on every farm.
2. Feed the animals on foods which would otherwise be wasted or marketed with difficulty.
3. Give the animals green alfalfa pasturage, and also concentrated foods.
4. Feed young pigs well until they are ready for market.
5. The best time to market is usually when the pig weighs about 160 pounds.
6. Provide shade and fresh drinking water.
7. Do not exert hogs during warm weather.
8. Use self-feeders for finishing market hogs.
9. Prevent hog cholera by vaccination if this disease is in the district.
10. Do not feed lice, but kill them by means of using the dipping vat or rubbing crude oil over the body.
11. Aim to improve the quality of your hogs by keeping only the best individuals.

More Sheep

Some time ago some one in describing the condition of the sheep industry in this country made the very elucidating statement that if all the wool grown in the United States last year were made into pure-wool cloth, and the cloth were cut and divided equally among the men and women of this country, there would be about 44 inches of such cloth to each person, and if the present decline in wool production continues for a few years longer there won't be enough to make a respectable breechcloth per capita. Better get some sheep.

In 1850 the average number of sheep

All Wool and a Yard Wide

per farm in the United States was 15, but in 1910, there was an average of a little over eight sheep to the farm. The government told us not long ago that our wool production has declined since 1910, the total production of last year being nearly 36,000,000 pounds less than seven years ago. The war is increasing the consumption of wool It requires the wool from a flock of 200 sheep to clothe and euip ten soldiers for the European battlefield. As the soldiers must have the wool, some of the rest of us stay-at-homes will have to be content with cotton clothing, and it makes us tremble to think what would be our condition if cotton production were not maintained. We might have to go back to the styles worn in the Garden of Eden, and clothe ourselves in fig leaves and blushes.

Seriously, there is an urgent need for an increase of sheep on our American farms. Every farmer should have a small flock. — Indiana Farmers' Guide.

MAKING ALFALFA SILAGE

Continued from Page 361

own shortage of feeding stuffs is such that if they are to keep alive their dairy herds, they must have a larger supply of wheat milled.

Already the milk supply in the Allied countries has been limited practically to the supply of children and other vitally necessary national uses, and any failure on our part to supply them with necessary feed stuffs for their dairy herd means that we shall cut into the actual safety of the children amongst the Allies. On the other hand, both our own population and the Allies are dependent upon our production of animal products, and we do not in any way wish to stifle this production. What we must secure is the utmost conservation in feed and the total elimination of waste by the careful feeding of animals and the use of all the roughage available.

Dairy Production is in Danger

One of the difficult problems is the distribution of wheat mill feeds, and this is made more difficult by the fact that the food administration, in an endeavor to protect the farmer, is maintaining an artificially low price on these feeds. One consequence is that a great deal of mill feeds are now going unnecessarily into work animals or beef production. Every farmer will recognize that the wheat mill feeds are vitally necessary for the dairy cattle, to some extent for the poultry, and for young pigs. Owing to the absorption of mill feeds at local points near the mill, considerable sections of the dairy industry are practically without mill feeds and our dairy production is thereby in danger.

A Pledge of Honor

With view to correcting this, so far as possible, the food administration desires to appeal for the asistance of the farmers of the country in the use and distribution of wheat mill feeds, in addition to general conservation of feeding stuffs. In this view, we are asking every buyer of wheat mill feeds, outside of the acute drouth area, to sign a pledge of honor not to use the wheat mill feeds for any purpose except the essential use in dairy, young pig and poultry production, and not to purchase or hold at any one time more than 60 days' supply. Unless we can secure this careful and specialized use of mill feeds, our dairy production in the congested eastern areas of the United States is bound to fall and to jeopardize the food supply of our people in that section. Otherwise it will be necessary to release the price restrictions on mill feeds and allow them to take their natural course.

With a view to securing this cooperation from the farmers all over the country in the interests of their industry as a whole, we are instructing the mills and all dealers in feeds to secure from the buyer of wheat mill feeds the following pledge:

"In order to assist the food administration in the distribution of wheat mill feeds, I hereby undertake on honor not to use wheat mill feeds for any other purpose than the feeding of dairy cattle, poultry, young pigs, or young calves, or the preparation of a weekly bran mash for work animals.

"I will not feed any more wheat mill feeds than is customarily fed to such animals, and I further agree not to have at any one time more than a 60-day supply of wheat feeds on hand."

The Jersey

Dollars in profit go with Jerseys. They actually "milk money." They feed less. They look real value. Jerseys are a gilt-edge investment for the one-cow home or the hundred-cow dairy farm. There are a thousand proofs of Superiority. Write to Breeders for prices and pedigrees. Let us send you "Jersey Facts", free.

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Young bulls from proven dams in Register of Merit
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YOUNG BULLS FOR SALE
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One at the head of your herd will pay big dividends on his cost. Write to
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Get One of My Jersey Bulls
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Registered young bulls from best families.
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125 REGISTERED HOLSTEINS 125
Tulare, California, November 20-21, 1918

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THIS SALE WILL CONTAIN MORE FEMALES BRED TO BULLS OUT OF 35 TO 40 POUND DAMS THAN HAVE EVER BEFORE BEEN OFFERED IN ONE SALE IN THE WEST.

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THE FEMALES in this sale are bred to two 30 pound bulls, three 35 pound bulls, one 36 pound bull, one 40 pound bull, a full brother to a 34 pound four year old, a son of It out of a 27 pound four year old daughter of King of the Pontiacs, a bull who has the second highest average in the world for yearly butter production of five of his seven nearest dams, a son of King Mead of Riverside out of a cow that made over 29,000 pounds milk and 1077 pounds butter in one year, and Prince Riverside Walker, whose sire and dam both have world's record daughters.

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Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, $2145 cash awards. Write to
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On Port Susan Bay, Snohomish County; 6000 acres of the best land that lies out doors; a 2 hours' ride from Seattle places your feet on the richest, most productive soil in the whole state of Washington; rail and water transportation; near paved roads, schools, churches, cannery and condensary; 3½ miles of waterfront and finest beach on Puget Sound; 20 miles of beautiful lake shore, surrounding 8 picturesque lakes; these lakes teem with trout. Get in on the first choice for $35 per acre and up; 10 yearly payments, 6 per cent interest.
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For Sale or Exchange in Kern County, smooth valley land all tillable. Good soil, plenty of water, grows fruit, alfalfa, cotton, beans, etc. Electric power, good roads, good neighbors, fine climate, schools, church; 160 acre relinquishment near railroad town, $10 per acre. Some improvements including well. Would consider auto in good condition as part pay. Owner in draft. Address Owner, J. S., Care Cultivator.

20 acres deep silt land, joining good town on the South; 10 a. alfalfa, 10 a. grain; 300 feet to railroad station. Plenty of water for irrigating. Soft water piped on place. Price right. Chas. McNeely, Alpaugh, California.

For Sale or Trade in Apple Valley, Victorville, California, 80 acres set to apples and pears; 100 inches water. What have you? Address Box 131, Victorville, California.

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SPECIAL
Flemish Giants and Long-haired Black's both the largest rabbits known and both fur and meat stock. Also a fine line of New Zealand and Belgian Hares. Guaranteed stock shipped anywhere. Write for particulars. PINE RIDGE RABBITRY, L. J. DOBBINS, Monterey, Cal.

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Guaranteed to do same work as new.
WINDMILLS—8 ft., $32.50; 10 ft., $42.50; 12 ft., $65; 16 ft., $125 save half.
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RANCH TOOLS — 1, 2, 3, 4 gang disc and moldboards; plows, spike tooth harrows, some new; Killefer cultivators; 4-horse power gear, $40; brand new John Deere alfalfa cultivator, cost $120, our price $85. New fanning mill hand or power, $39.
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Wanted — Chocolate colored Toggenburg milk goat; 2 horse weed cutter. H. Madlener, R. 2, Orange; one-half mile north, one-quarter mile west of County Farm.

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A few fall boars left by Royal Superbus —also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
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The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

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One Registered Percheron Stallion—Black 10 years, 2000 pounds. Four Percheron mares, eight and nine years. Fanita Ranch, Santee, San Diego County.

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SHORTHORN CATTLE, SHROPSHIRE SHEEP. Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., California. W. P. Dwyer and W. S. Gulford, Owners.

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Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, California.

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Fall Chicks For Sale—400,000 S. C. White Leghorn chicks from free range Hoganized stock only, for delivery from July to December, at very reasonable prices. Fall chicks are most profitable—broilers in ten weeks, pullets lay at five months. We guarantee safe delivery of all chicks to destination. Shipped safely anywhere West of the Rockies. No money in advance, pay on delivery. Special prices on 500 and 1000 lots. Finest hatchery in the world. Established over twenty years. Further information write Must Hatch Incubator Company, 424 Seventh Street, Petaluma, California.

Feed High; Eggs, Meat Higher! Our 200-290 egg Leghorns, Anconas, Reds, Rocks, Wyandottes, Minorcas, ducks are more profitable now, clearing $5.00. Some greatest government trapnested hens, 280-283. Hundreds breeders, laying, younger pullets; thousands chicks weekly; reasonable, fine males $1.00 up, worth treble. James Beeson, Pasadena, California.

For Sale—1 George Economy fresh air Brooder stove, corrugated iron house 16-10; 200 feet 6 inch galvanized irrigation pipes, poultry netting, corn sheller. H. Madlener, R. F. D. 2, Orange, California.

White Leghorn Baby Chix from heavy laying (Hoganized) stock. $14.00 per 100. We guarantee safe arrival. The Pioneer Hatchery, 409 Sixth St., Petaluma, California.

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"Eastman's Bred - To - Lay" Hoganized and trapnested Barred Plymouth Rocks, Fall chicks, eggs, cockerels. Fairmead Poultry Farm, Fairmead, California.

Black Orpingtons Lay, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, California.

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For Sale — $2500.00 buys a 30x100 foot greenhouse, latest type; top and side ventilators, heavy redwood benches; also large lath houses; hot bed sash; acre of fine soil. Situated in thriving town of thirty thousand inhabitants. Excellent market. Expenses light, very little fuel required Sale terms to suit or will lease. TUCSON SEED & FLORAL CO., Tucson, Arizona.

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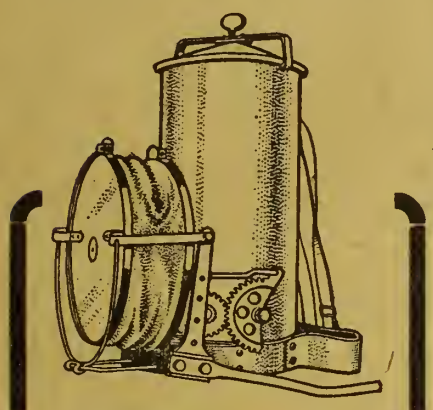
Peruvian and Common Alfalfa Seed—Specialty. Write for prices and sample. Box 501. Fowler, California.

ENGINES

Several New and Slightly Used Engines. ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

American Beauty Dust Sprayers



Kill the Spider
Tomato Worm
Mildew
Squirrels and Gophers

Send for our book

Standard size **$18.00**
Junior size **$16.00**

including

The Liquid Flame

Gopher and Squirrel Exterminator

At your dealers or send to us

The California Sprayer Co.
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SULPHUR

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards six times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

Try our new brand of VENTILATED Sublimed Sulphur, 100 per cent pure, for making Paste — (Atomic Sulphur) and for Dusting.

For Lime Sulphur Solution, use our DIAMOND S Brand Refined Flour Sulphur. We can furnish you this sulphur at such a low price that it will pay you to mix your own solution.

San Francisco Sulphur Co.
624 California St. **San Francisco, Cal.**

We are equipped to make immediate shipment. Send for illustrated booklet; price list and samples. Tel. Kearny 871.

When Writing Advertisers, Mention The Cultivator.

FRESNO DISTRICT FAIR

Continued from Page 371

Bull, two years old and under three—1, Jolly's Senator Raleigh, Thorpe.

Senior yearling bull—1, Lilly's King of L, Thorpe.

Junior yearling bull—1, Jap"s Perfection Owl, Miller.

Senior bull calf—1, Pearls Altama Underwood, Miller. 2, Bright-Eyed Lassie's Fox, Thorpe.

Junior bull calf—1, Loretta's Majesty Mabel, Miller. 2, Chappie of M, Thorpe.

Aged cow—1 and 3, Salome of Mossdale and Valet's Golden Biddy, Thorpe. 2, Goldie of Venadera, Miller.

Cow, two years old and under three—1, Angela of Venadera, Miller. 2, Nonie of Mossdale, Thorpe.

Senior yearling heifer—1, Lucille of Venadera. 2 and 3, Bess of Mossdale and Lass of Mossdale, Thorpe.

Junior yearling heifer—1, Vega of Venadera, Miller.

Senior heifer calf—1, Fair Salome of Mossdale, Thorpe. 2 and 3, Eloise of Venadera and Ramona of Venadera, Miller.

Junior heifer calf—1 and 3, Miller. 2, Thorpe.

Senior champion bull—Altama's Interest, Miller.

Junior champion bull—Jap's Perfection Owl, Miller.

Grand champion bull—Altama's Interest, Miller.

Senior champion cow—Salome of Mossdale, Thorpe.

Junior champion cow or heifer—Lucille of Venadera, Miller.

Grand champion cow—Salome of Mossdale, Thorpe.

Aged herd—1, Thorpe. 2, Miller.

Young herd—1, Miller. 2, Thorpe.

Calf herd—1, Miller, 2. Thorpe.

Produce of dam—1, produce of Violet of Sunnybrook, Thorpe.

Get of sire—1, get of King's Valet, Thorpe. 2, get of Altama's Interest.

AYRSHIRE SHOW

E. B. McFarland, San Mateo, was the only exhibitor of Ayrshires. This herd always adds strength to any show and the splendid breed promotion work being done by Mr. McFarland is beginning to bear fruit. The California dairyman can not fail to be impressed with the splendid qualities of this Scotch breed and the future will surely see many Ayrshire herds in this state.

SHORTHORN SHOW

As noted above only one herd of beef cattle was on exhibit. This was the Maxwell & Miller herd from Steamboat Springs, Colorado, that has come West for the coast shows. The cattle were on the road six days and showed the effects of travel, but by the opening of the Los Angeles show they should be in much better form. The herd is headed by the roan two-year-old, Princely Stamp, a grandson of Sultan Stamp. He is a bull of considerable scale but needs width and depth to overcome his appearance of being a bit upstanding. He is quite attractive in front, with a bull's head and a lot of character.

Two junior yearlings—a roan by Earl of Avondale and a white son of Gainford Archer 2d, stood in the order named. The winner having a stronger top and better heart.

The roan senior calf is about as attractive as any of the bulls. The calf by Earl of Avondale and out of a Queen of Beauty dam could have been placed above the two-year-old for the championship and not looked out of place.

Among the females the thick roan two-year-old, Cloverleaf Lovely 2d, by Maxwalton Sultan that was made senior champion, and the very attractive white senior heifer calf, Flora of Anoka, by Lavender Sultan, are rather outstanding. However, the calf was easily grand champion. She is a sweet thing, very even in her lines, and particularly nice about the tail head.

Swine awards next week.

AVOCADO DAY AT LIBERTY FAIR

Saturday, October 19, will be Avovado Day at the California Liberty Fair. The California Avocado Association will hold its seventh semi-annual meeting on that day in the auditorium on the second floor of the State Exposition building at the fair grounds, Exposition Park, Los Angeles.

An interesting and popular program is being arranged. The annual address of the president will be made at this meeting. There will be a paper by Wilson Popenoe, covering his recent investigations of avocados in Mexico. Among other speakers will be Juan Murrieta, recently elected an honorary member of our association; J. M. Elliott, vice-president of our association; E. M. Chace of the U. S. department of agriculture; Dr. J. Eliot Coit, Los Angeles County farm adviser.

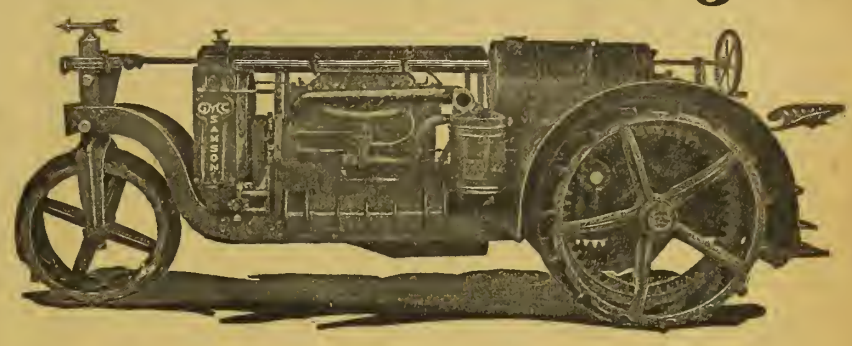
1918 GUARANTY SALE

The 1918 Guaranty Sale of registered Holsteins promises to far surpass anything heretofore attempted in the way of Holstein sales in the West. It will be held on Thursday, December 5, at Sacramento on the state fair grounds. The sale was approved by California Holstein-Friesian Association, and President Fred W. Kiesel appointed James W. McAlister, Jr., Chino, Frank L. Morris, Woodland, H. V. Bridgford, Knightsen, and C. L. Hughes, Sacramento, as the four members of the committee of selection. The committee started its work about the 20th of October and has secured some of the highest record cows and daughters of the highest record cows ever made available for public sale in the West. It will be remembered that last year the 1917 Guaranty Sale consisted of 72 head that averaged $957 per head. When it is stated that the committee this year started out to pry loose from leading breeders a herd of cattle that would be likely to surpass last year's average, some idea may be had of the extraordinary requirements made for entry in this sale. The sale will be managed by California Breeders Sales and Pedigree Company, who made such a signal success of last year's sale.

CALIFORNIA CREAMERY OPERATORS' CONVENTION

California Creamery Operators' Association will hold its annual in Visalia, Tulare County next week, October 17-19. There will be a butter scoring contest under supervision of the association. Addresses on "Cow Testing Associations" by E. H. Webster; El Centro; "Cooperative Bull Associations" by Prof. F. H. True, University Farm; and "Shall California Have a Proprietary Feed Control Law" by Geo. R. McLeod. The last large questions" by Prof. G. H. True, University Woll, University Farm. Other addresses are: "Business Phases of Dairy Manufacturing" by Dr. C. L. Roadhouse, University Farm; "Work of United States Bureau of Markets" by L. M. Davis; and "Standardization of Creamery Butter" by S. L. Denning, University Farm. Other addresses by C. F. Doane, S. H. Greene, J. P. Murphy, W. R. Roussel and N. Knudsen.

The Old Order Changeth



MODEL S-25

SAMSON SIEVE-GRIP TRACTORS

GMC TRACTORS GMC TRACTORS

Farmers have abandoned slow, laborious methods of days gone by. Horse power and hand tools have given way to the tractor and its accompanying implements. For this reason, the demand for increased food production can be met in spite of shortage of labor and horses. As the tractor will be the most potent instrument to accomplish this happy result, how important that you select one best fitted to meet your needs, strong, simple and durable, developed and perfected through many years of actual field service.

THE GMC SAMSON SIEVE-GRIP TRACTOR meets every requirement. It does the work of ten horses, better, faster and cheaper, and is adapted for countless tasks, stationary and otherwise, for many of which horses are not suitable. It has been a demonstrated success for many years.

Its sieve-grip wheels do not pack the soil. They assist cultivation. Air entering its carburetor and crank case vent is washed and freed from dirt and grit, assuring long life to all working parts. Its lubricated roller pinions reduce friction to a minimum and deliver maximum power to the drawbar. Its automatic control secures ease and reliability of action.

For continuous satisfactory performance, buy a GMC SAMSON SIEVE-GRIP TRACTOR. Ask the man who owns one or send for our booklet, Better Farming.

Samson Sieve-Grip Tractor Company

DIVISION OF

General Motors Corporation

Stockton, California

Buy More Bonds

Don't be a slave to your wash board.

You Can wash clothes quicker and get them cleaner and whiter—with less work by using

COCOA NAPTHA SOAP

—the laundry soap that took the boil and toil out of Wash day. Works splendidly in cold water, warm water, hard water, soft water.

Saves fuel. Saves clothes. Saves tempers.

Ask your dealer for it today.

NO BOILING LESS TOILING

Made in California By

Los Angeles Soap Co.

Los Angeles & San Francisco

Portable-economical

Perfection Oil Heater is easily carried—up stairs or down, from this room to that—anywhere heat is needed.

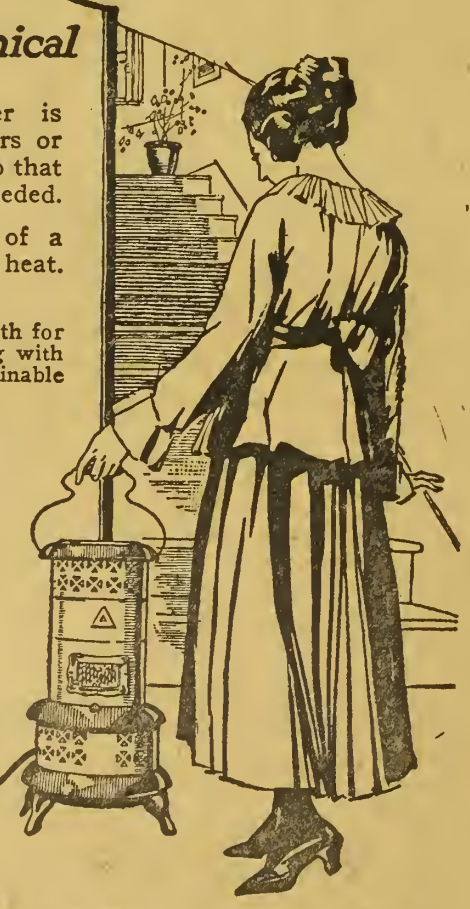
Lights at the touch of a match—gives instant heat. No smoke or odor.

Steady, comfortable warmth for many hours on one filling with Pearl Oil, the ever-obtainable fuel.

Cuts fuel bills, for less furnace heat and fewer grate and coal-stove fires are required. Oil consumed only when heat is needed—no waste.

Buy Perfection Oil Heater today. Dealers everywhere.

STANDARD OIL COMPANY (California)



HEAT WITH PEARL OIL

PERFECTION OIL HEATER

Household Department

THE BOY NEXT DOOR

By Will M. Cressy

My life's been pretty happy; I've had a lot of joys;
We've only had one sorrow (we never had no boys).
But I've got a little daughter, and I know she has a store
Of love, and trust, and longing for that boy next door.

And when that fateful day arrived, when we knew we'd got to fight,
I forgot the way I'd voted—for our President was right.
I couldn't go to battle; I was old, and stiff, and sore.
But the first one that enlisted was that very boy next door.

And, by Jove, I'm right behind him, with every cent I've got,
To buy him food and shelter, powder, guns and shot;
And, if God will just watch over him and bring him back once more,
I expect I'll be a daddy to that very boy next door.

Now, there's a lot of us old fellers, too old to go and fight,
With no sons to represent us and battle for the right;
But we can give our money, as we never did before,
And love, and hope, and courage—to the boy next door.

HILLSBORO'S BIT

(Continued from last week.)

The season passed, and the crops grew. It wasn't a wonderful season cold and wet and backward; but somehow the crop on that western slope beat all the rest. Parson Wilbur said 'twas blessed, and I guess it may have been. I suppose every able-bodied man in Hillsboro put in some time there, and the women would have if we'd let 'em. There's mighty little in peace or war you can keep the women out of nowadays. But we chased 'em back to their knitting and carried on, as the saying is, by ourselves.

For my part, I don't know that there was much charity in what I did. Chopping weeds is mighty outletting for the feelings, sometimes. When little Doc went away he left his family in the house he'd built right opposite mine, and Allen's wife and baby came to stay with 'em. As far as money went, the girls made out very well on what the boys could send, for little Doc was getting more than he ever had in Hillsboro—not that he'd gone for that—and Allen had got a lieutenant's commission in the engineers; but both families missed having a man at the head mighty bad, and it sort of came to me to fill the lack as well as I could.

I started in cheerful and thoughtless, for I'd brought up one small family, without sparing unduly the rod or the spank, and with a fair amount of credit, I think. But 'twas soon borne in on me I'd been a trifle brash about undertaking any more. There's something about a grandbaby that softens my harsh old hand out of all sense, and it didn't take little Phil Seagraves long to find it out, either—the leetle blue-eyed scamp! You ought to have seen him laugh the other day after he'd fired the shop key into the pond, and I had to climb in through the window! If little Al or Tommy'd done that—Yet, somehow, it's always "next time" that I'm going to spank that youngster. And little Millie's just like him, as far as a two-year- old can be. Little Allen Orramel's still in his cradle, thank goodness, and I do hope his dad will get back before he gets out.

Sometimes I used to go out to the Red Cross cornfield in the early morning before time to open the shop, and it frequently amazed me, the people I'd find there. Old Tom Finden, the town drunkard, the nearest-to-worthless character we've got—hadn't done a stroke of work in years except to keep himself in whiskey and hard cider—used often to come down in the early light; but he'd always shoulder his hoe and hobble off if anyone came near or tried to speak to him. I know, because, thinking that the old chap couldn't have had a meal of decent woman's cooking for years, I tried several times to ask him over to breakfast. But I never made out. So sometimes, if I saw old Tom there, I'd send a youngster to tell ma to send a good snack to Finden's shanty, and when I judged it had arrived I'd sort of edge the old man off. But I've wondered since whether he really liked it. It might have seemed like some one was trying to pay or bribe him; and I reckon there aren't many, even like old man Finden, but like to do a free and decent thing, now and then for a cause that's bigger than they are.

I guess even the old tight-wad, Squire Dickerman, could see that we were getting out more than we put in, harvest or no harvest. It was mighty little to do, while the boys were gettin gready to give their lives; but thinking we were doing something sort of saved our self-respect, and that everyone was helping to do it together added to our respect for one another. Somehow our backs never got so tired working in the Red Cross cornfield, and there was a whole lot less tendency to cuss if something broke than if we'd been doing our own work.

I remember now how one day Brad Gregory was cultivating corn while Tiph Jackson was hilling up potatoes on the opposite side as far away as he could get, for they hadn't spoke since Tiph shot some of Brad's hens for scratching up his strawberries ten years ago. Brad, perhaps, was thinking about his boy Joe, who was crossing the water about that time, for all of a sudden he ran smash into a rock and busted the cultivator out of all use. Tiph kept on hoeing, but now and then he'd glance over where Brad was picking up the pieces. His boy hadn't gone over, but there was no telling when he would. And Tiph knew that Brad had a big field of corn of his own that was spoiling for cultivation. He kept hoeing slower and slower, and by and by, when Brad had the pieces picked up and had started for home, Tiph came stamping over.

"Brad," says he "take my cultivator out of my tool shed and use it till you get yourn fixed."

And that wasn't the strangest part of the matter. Brad took it!

September came, and it was cold and wet. Potatoes had done well and were almost ready to dig. Beans were fine, and hard in the pod, though late planted. Corn was still in the milk, and prospects looked mighty dubious, for two or three more weeks were needed to make anything of it. And

They wear like iron—

Mayer

HONORBILT SCHOOL SHOES

Ask your dealer for Mayer Shoes. Look for the trade-mark on sole.

F. Mayer Boot & Shoe Co.
Milwaukee, Wis.

RO-SAN Indoor Closet

The original chemical closet. More comfortable, healthful, convenient. Takes the place of all outdoor toilets, where germs breed. Be ready for the long, cold winter. Have a warm, sanitary, comfortable, odorless toilet right in the house anywhere you want it. Don't go out in the cold. A boon to invalids.

GUARANTEED ODORLESS

The germs are killed by a chemical in water in the container. Empty once a month as easy as ashes. Closet guaranteed. Thirty days' trial. Ask for catalog and price.

ROWE SANITARY MFG. CO.
1710 8th St., Detroit, Mich.

Ask about Ro-San Washstand—Hot and Cold Running Water Without Plumbing.

the month wasn't many days old when the frost came. We knew it at sunset. The wind had been high after a cold rain, but it dropped with the sun and the sky cleared. In the morning that fine field of corn, and thousands more like it, wouldn't be worth 30 cents.

Quite a shivering bunch of us collected to mourn over its passing and debate whether we hadn't better cut as much as we could and lay it down for ensilage. There didn't seem to be much else to do.

Then Brad Gregory spoke up. "When my boy Joe was goin' across, one of them pesky U-boats showed up some miles off, and the captain of the transport slung a lot of sooty stuff into the fire boxes and sent up a big cloud of smoke that covered all the ship and acres and acres besides, so's't the pesky U-boats couldn't find it."

"What's that to do with us?" says I.

"Smoke's hot, as well's thick and all the time moving, aint it?" says he. "Now if we strung a smudge along all the west side of this cornfield, what wind there is and the slope of the ground'll carry the smoke and the warm air up across this corn, and who knows but what we might save some of it?"

"It's worth tryin'," says Tiph Jackson. "And all this west slash from the lumber lot alongside'll smudge fine."

So we telephoned all over town for help, and things moved considerable lively for a while. Everyone dragged brush in the falling darkness; even old man Finden turned out and fetched quite a few limbs. Before the mercury crossed the line, we got fire started all along the field. We begun to have some hope.

But the thermometer fell fast, awful fast. It surely was the rippingest frost for the time of year I ever did see. It was plain the upper edge of the field, at least, was going to get nipped.

"We c'n save that yet," says old man Finden. 'Twas the first word he'd spoken that evening.

"How?" says I.

"Git Washy Perkyn's power sprayer, and spray the air along the edge with hot water."

Some of the folks didn't believe that would work. The hot water would scald the corn as it fell, they said, and then it would cool off and freeze on the leaves before the machine could run to the other end of the field and back.

"I believe it's worth tryin'," says Tiph Jackson; and Brad Gregory and most of the rest of us thought so, too.

So we hustled off and got that power sprayer. It was locked in a shed, and Washy's caretaker was away, but we picked the lock with a sledge hammer and rolled the thing out. It was a powerful old elephant. Washy got it a year or two back when the bugs got into those big old elms he's so powerful proud of. The tank is mounted on a big auto truck, and the engine runs the sprayer. It squirts like a young fire engine and cost the price of a good farm. We ran it down to the field, where the boys had already heated water in big kettles, and started. First thing she stuck in the soft, wet earth of the bean patch like we might have known she would. Then all hands had to take hold and push her on to a sort of railway we made of the stacked planks of the lumber lot.

I guess even Kaiser Bill—drat him!—would have laughed if he'd seen us that night, lugging brush by lantern light and heating water and carrying planks and squirtin that old popping, fiery dragon, but I don't remember then noticing how funny it was. For one thing, someone had to stand in the cornfield at first and judge whether the water was coming down too hot. And of course I was some one. But my jacket was pretty wet, anyhow. I reckon the united steaming sweat of Hillsboro that night raised the local temperature at least a degree or two and maybe was what saved the day, or night rather.

Anyhow, when morning dawned there was no frost on that corn, though every stalk outside for a hundred miles each way was bleached white and ruined. Not another hint of frost came for three full weeks—weeks of fine corn weather, too; and then we were ready for it.

The proceeds of that field fitted out a fine big ambulance for "over there," and some besides. We old men can't fight the Kaiser like Allen and Tom and the rest of the boys, or even fight death for the fighters as little Doc'll do, but we like to think that where the need is the wagon we worked and paid for will do our bit for us, as far as a thing of wood and steel can do. And perhaps there'll be in it—machinery's mighty human sometimes—a spark from the soul of each of us who couldn't go, who wait back here in the old home hills for the word that may bring to us the battle and the bitterness, the last word of some of those who must give their all and, giving it, give our all.—Youth's Companion.

GRAPE SYRUP

Written for California Cultivator
By Mrs. Linda W. McNeil

I have been experimenting with grape syrup. Having seen the many suggestions of a possible new source of sweetening, the next thing was to try it. So, with Baby June trudging behind me I went to the vineyard for the "makings" of the new syrup.

For the first batch I gathered a variety: Muscat, Tokay and Cornichon. This proved very satisfactory, the result being a clear, amber syrup much sweeter than any of the syrups of commerce and a delicious accompaniment to hot cakes for breakfast. As a further experiment it was tried in coffee, where it proved not unpleasant, although very different from sugar. For one who is fond of lemon in either coffee or tea, it would surely be agreeable. Tried it in cocoa with the same result; a strange but pleasant flavor was imparted to the beverage.

The next experiment was with cookies. This was the way they were made: One egg, two-thirds cup grape syrup, level teaspoon ginger, one-half teaspoon cinnamon, scant teaspoon soda, one tablespoon fat; one-half cup white corn flour and sufficient white flour to make a batter which would drop from a spoon, a little salt. Drop from spoon on to lightly greased pans and bake till brown in a moderate oven. The "Goodman" said: "Best cookies I've eaten in ten years." Baby June said, "Goody, goody," and reached for more.

Next time I made them a half cup or more of raisins was added with good results.

Next batch of syrup was made entirely of Muscats and was also very good, perhaps better than the mixed grapes.

Next experiment was the making of syrup from Phillips' Cling peaches. They make a lighter colored syrup of not so much body, but very good to eat. Have not tried it in cooking as yet. When the syrup is nearly thick enough and before it stops boiling, I added to it granulated sugar about one-half a cup to a pint of the syrup, which helped to give it body. If you grow grapes try it for yourself and see how good it is.

LET'S WIN IT!

Let's win it—the fight for the freedom of earth!
Its ghastly, its grim; no matter for mirth.
We may have been loath, have been slow to begin it,
But now we are in, let's win it! Let's win it!

Let's put aside boasting of what we can do,
And strain every sinew to see the thing through!
Let us waste not an hour, let us waste not a minute,
But since we are in it, let's win it! Let's win it!

Let's win it! Away with all selfish desires!
Let us think of our children, remember our sires!
Up, up with the Flag, every star that is in it!
The fight is our own, so let's win it! LET'S WIN IT!

—Life.

Silent pro-German appetites are as hostile to the Allied cause as disloyal utterances.

A Weatherproof Coat

In every Raynster there is a Raynster Label. That label assures you something more than just a raincoat. It is the sign of the best in weatherproof clothing of all kinds. It is the proof of full value for money received.

Buy a Raynster today and be sure the label is in it. Raynsters are good insurance of health and clothing for every member of your family.

There are Raynsters in all styles of weatherproof clothing. The heavy rubber surfaced kind for outdoor work; cloth coats suitable for dress or work, these are good overcoats as well as good raincoats; heavy ulsters that are warm and shower-proof, splendid for driving in cold or rainy weather. Raynsters are made for every member of the family and are priced according to materials and workmanship necessary to produce each particular kind—the label guarantees value for price—always look for it. Don't buy just any old raincoat when your dealer can get you a Raynster.

Write for a Style Book showing many Raynster models.

Raynster
US
UNITED STATES RUBBER COMPANY
RUBBER SYSTEM
AND ASSOCIATED COMPANIES
NEW YORK BOSTON

Trade Mark
Reg. U. S. Pat. Off.

Look for this Label in your Raynster

United States Rubber Company
Clothing Division, New York and Boston

Raynster

Reg. U. S. Pat. Off.

Los Angeles Market

Los Angeles, October 9, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.

Cal. Extra Creamery 60

Oct.	2	3	4	5	7	8
'18 ...	60	60	60	60	58	60

Rcts. wk. ending Oct. 8, 33,400 lbs.

CHEESE

Brokers' prices:
California fresh, lb. 28½

EGGS

Exchange quotations. Price to retailers 2 to 3 cents higher.
Fresh extras 60
Case Count 54
Pullets 49
Dairy Exchange prices past week on fresh extras.

Oct.	2	3	4	5	7	8
'18 ...	60	60	60	60	60	60

Rcts. wk. ending Oct. 8, 1619 lbs.

POULTRY

We quote to producers.
Broilers 35
Fryers 31
Hens, small, 20; heavy .....26@29
Colored 31
Ducks, lb., 20; ducklings .....22@25
Roasters 31
Roosters, old 20
Turkeys .....30@35
Geese 15
Belgian Hares 16
Squabs .....30@35

LIVESTOCK

We quote cwt. f. o. b. L. A.
Corrected Wednesday morning, October 9, by the Cudahy Company.
Cattle—
Beef steers, av. 1000-1100 lbs.....12.00
Heifers, good 9.00
Cows, good 8.50
Veal Calves 10.00
Canners .....5.00@6.00
Hogs—
Av. 150 lbs. 17.00
Av. 175-225 lbs. 18.00
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers 11.50
Ewes 10.50
Lambs 15.50
Yearlings .....11.50@12.00

POTATOES

Wholesale selling prides:
Burbanks .....2.35@2.85
Sweet, lug .....75@85
Idaho Russet .....2.25@2.35
White Rose, lug .....75@90

ONIONS

Wholesale selling price, cwt.
Australian Brown, cwt. 1.75
White Globe .....2.00@2.50

VEGETABLES

Wholesale prices:
Beans—String .....4@4½
Limas, lb. .....4@5
Cabbage, cr. .....2.50@3.00
Carrots, doz. 40
Cauliflower, doz. .....1.25@1.50
Celery, cr. .....3.00@3.50
Corn, lug .....50@75
Cucumbers, lug .....45@50
Egg Plant, lb. 3
Horseradish, lb. 15
Lettuce, cr. .....70@85
Peppers, Chili, lug 40@45; Bell, lug....40
Tomatoes, lug .....56@1.15
Turnips, doz. 40
Watercress, doz. .....35@40

FRUITS

Wholesale prices:
Apples—King David .....1.85@2.50
Bellefleurs, bx. .....1.50@1.75
Newton Pippins .....1.35@1.65
Jonathans .....2.00@2.25
Cantaloupes — Cabbage crates: White Rinds, 3.00@3.25; Casabas, 3.25@3.50.
Crabappies, lug. .....1.35@1.40
Figs, lb. .....3@5
Grapes—Homegrown, best, lb., Malagas, 4@5; Muscats, 4; Tokays, 5@6; Cornichons, 5; Black Morocco, 4; Sultana, 5; Red Emperors, 4@5; four-basket crates, best Concords, 1.40@1.50; Mission, 1.50 lug box.
Nectarines, lb. .....5@6
Peaches—Salways, 1.30@1.40; poorer, 1.00@1.10; Henrietta, 1.25@1.40 lug box. Northern Salways, fy., 1.25@1.40 lug box. Orange Clings, 5 lb.
Pears—Bartletts, bx. 2.75
Quinces, lug .....90@1.00
Watermelons, lb .....½@1¼

CITRUS

Lemons, packed, 4.75; loose.....3.00@3.50
Oranges — Valencias .....7.50@9.50
Grapefruit .....4.50@6.00

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....18@20
Amber extracted 16
Fancy white comb, per case.....6.50
Comb Lt., amber, per case .....5.00@6.00
Beeswax, lb. .....32@34

BEANS

Price to retailers, cwt.:
Lady Washington 11.25
Navy 11.25
Pink 8.25
Tepary 8.00
Red Mex. 9.00
Lima 12.75
Blackeyes 7.75
Garbanzos 11.00
Soy 8.00
Lentils 21.00
Kidney 12.00
Henderson Bush Lima 10.50

HAY

Quotations by Nichols - Loomis Company. Prices to growers f. o. b. L. A.:
Tame Oat .....25.00@27.00
Volunteer Oat .....12.00@14.00
Wheat .....21.00@24.00
Barley .....21.00@24.00
Alfalfa .....18.00@21.00
Quotations furnished by California Alfalfa Growers' Association, Riverside, California.
No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS

See San Francisco market.

San Francisco Markets

San Francisco, October 8, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:
Two-pound squares, parchment wrapped, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.
Dairy Exchange quotations, lb.:
Extras 62
Prime firsts 61
Prices Extras past week and year ago:

Oct.	1	2	3	4	5	7
'18 ...	65	67	68	67	64	62
'17 ...	44½	45	46	46	46	..

Rcts. wk. ending October 7, 334,100 lbs.

CHEESE

Dairy Exchange quotations:
Cal. Flats .....27½@29½
Cal. Y. Am. 31
Cheddar 30½
Ore. Y. Am. 30½
Jack Cheese, full cream 28

EGGS

Dairy Exchange quotations:
Extras 64½
Selected Pullets 54½
Prices Extras past week and year ago:

Oct.	1	2	3	4	5	7
'18 ...	66	66	66	65	64	64½
'17 ...	47	49	49½	55½	49½	..

Rcts. wk. ending Oct. 7, 6343 cases.

POULTRY

We quote to producers, lb.:
Per lb: Large hens, 31@34; Leghorn hens, 28@31; broilers and fryers, ¾ to 1½ lbs., 45; 1½ to 2 lbs., 34@35; 2 lbs. and over, 30@33; old roosters, 22@23.
Belgian hares, live, 17@18.
Squabs, doz., 4.00@5.00.
Turkeys, live, 33@36.

LIVESTOCK

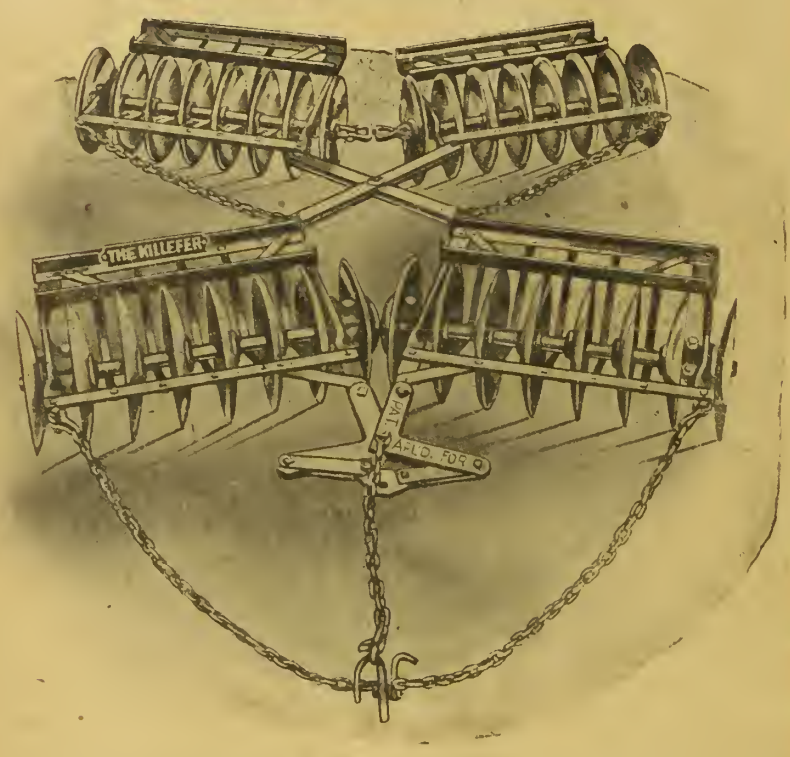
Prices gross weight:
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.
Steers, lb., 10@12; thin, 8@9; cows and heifers, 6½@8; thin, 4@5; calves, 6@11.
Sheep—Lb. gross weight: Wethers, 11½@12; ewes, 9@9½; lambs, yearlings, 12@12½; milk, 14@14½
Hogs—Hard grain fed, weighing 100 to 140 lbs., 17½; 140 to 300 lbs., 18; 300 to 400 lbs., 17½.

POTATOES

Wholesale selling prices at wharf, cwt.:
River, new, cwt. .....1.75@2.30

The Killefer Automatic Double-Disc HARROW

Killefer Efficiency — Killefer Quality



Working Position

Without doubt this is the most important development made in the manufacture of farm tools to date. This is the only Automatic Disc Harrow on the market. It was designed and built in our own shops completely. We are therefore the originators and have it fully covered by patents.

In the development of this, our latest triumph in Disc Harrows, we have not only maintained the greatest strength and durability as originally designed but have added additional valuable features, namely your

Automatic Shifting Device

controlled by the operator from the seat of the Tractor and a greater flexibility so desirable in a tractor disc harrow, but not found in other makes.

This Harrow is built in all sizes from 5 to 12 feet inclusive.
Orders should be placed now to insure delivery.

The Killefer Mfg. Co.

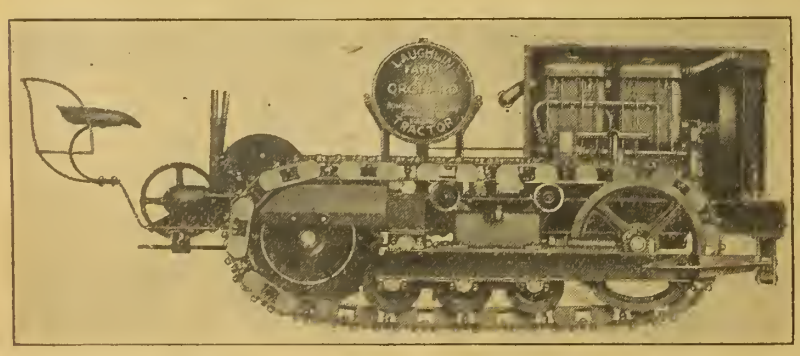
2209 So. Santa Fe Ave. Los Angeles

See Laughlin's Husky 10-20 Tractor

AND

The Crawford Transplanting Machine

They will be on Exhibition in the Tractor and Implement Tent



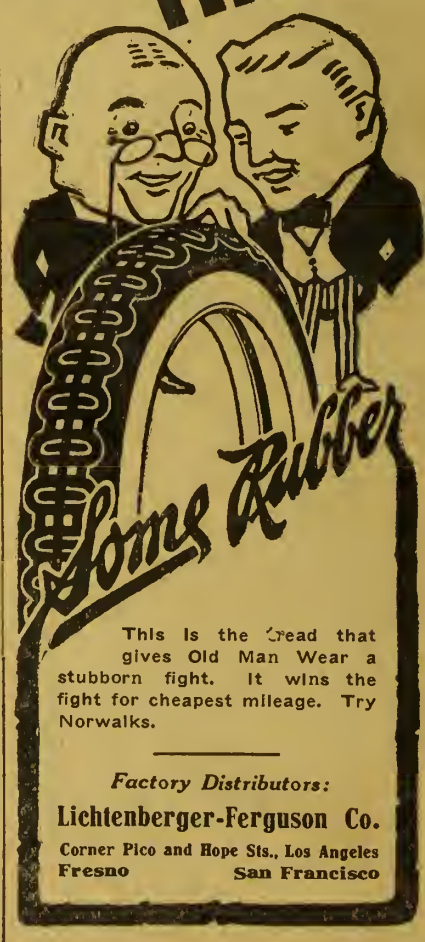
At the Liberty Fair, October 12 to 26

Don't Fail To See Them

Homer Laughlin Engineers Corporation

2652 Long Beach Ave. Los Angeles

NORWALK TIRES

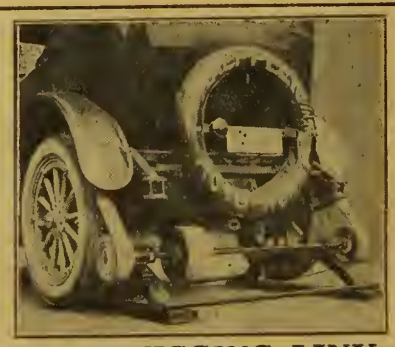


This is the thread that gives Old Man Wear a stubborn fight. It wins the fight for cheapest mileage. Try Norwalks.

Factory Distributors:

Lichtenberger-Ferguson Co.

Corner Pico and Hope Sts., Los Angeles
Fresno San Francisco



THE MISSING LINK

between your auto and power farm machinery is offered at a price that any farmer can afford to install it.

IT WILL TRANSMIT POWER

and run all power machinery of any description limited only by the power of your auto.

Live Agents Wanted.

Kaeppler Auto Works

230 W. Washington St., Los Angeles, Cal.

Sweets, lb. .....4@4½

ONIONS

Wholesale selling price on wharf, cwt.:
Australian, Brown and Yellow..1.00@1.15
Garlic, new, lb. .....12½@15

VEGETABLES

Wholesale selling price:
Artichokes, doz. .....40@75
Beans, String, lb. .....5½@8
Limas, lb .....9@10
Carrots, sk. .....75@85
Corn, green, sk. .....1.50@3.00
Celery, doz. .....30@50
Cucumbers, lug .....75@1.00
Pickling, lb. .....3@4½
Egg Plant, lug .....1.00@1.25
Lettuce .....1.00@1.25
Okra, bx. 50
Onions, green, bx. .....65@75
Peas, lb. .....12@14
Peppers, Bell, lug, 50@85; Chili.....50@65
Squash—Summer, lug .....50@75
Cream, 75@85; Hubbard, ton 40
Tomatoes, lug. .....75@1.50
Pumpkins, sk. .....85@90

FRESH FRUITS

Apples — Gravensteln .....1.25@2.50
Bellefleur .....1.50@2.00
Jonathan .....1.50@3.00
Newton Pippins .....1.40@2.00
Spitzenberg .....1.75@2.50
Bananas, lb. .....7@7½
Berries—Ch.: Strawberries, 9.00@11.00; raspberries, 8.00@10.00; blackberries, 7.00@8.00; huckelberries, lb., 12½@16.
Figs, single .....50@75
Honey Dew Melons, cr. .....1.50@1.75
Grapes—Lug, 1.25@1.75; Muscat, 1.75@2.00.
Melons — Persian, 1.75@2.25; casabas, 1.00@1.25; watermelons, 1¼@1½ lb.
Nectarines, cr. .....50@1.00
Peaches, bx. .....1.00@1.50
Pears, Bartlett, wrapped bx.....1.75@3.00
Beurre Hardy, lug .....1.40@1.50
Plums, cr. .....1.25@1.50
Persimmons, bx. .....1.00@1.50
Pomegranates, ½ orange bx.....1.25@1.50
Pineapples, doz. .....4.50@5.00
Quinces, lug .....1.00@1.25
Watermelons, lb. .....1¼@1½

CITRUS

Lemons, bx., fy., 2.50@5.00; lemonettes, 2.00@3.50; oranges, 7.50@8.50; grapefruit, 5.50@6.50.

NUTS

The Almond Growers' Association has established opening prices as follows per pound:
Nonp. 27½
I.X.L. 25½
Ne Plus 24½
Drake 20
Outside dealers have named prices above these quotations and it is understood association stock is practically closed out and prices withdrawn.

Walnuts: Net prices have been named by the California Walnut Growers Association:
No. 1 Softshell 28
No. 2 Softshell 25
Jumbo 30
Fancy Budded 31½
Golden Gate Budded 29
Franquettes, Eurekas and other fancy varieties sold on sample. No. 1 Softshell guaranteed 88 per cent good; Fancy Budded, 90 per cent. In case of worms or damage by ants not more than five per cent.

HOPS

Per lb., 10@11.

RICE

California Rice—1917 crop, nominal; 1918 crop, when harvested per 100 lbs.: Paddy rice, 4.32; clean fy. Japan, 7½ lb.; ch. Japan, 7 3-8 lb.; fy. second head, 6 7-8 lb.; screenings, 5 5-8; lb.; brewers, 5¼ lb.; rice polish, $50 ton, car lots; rice bran, $36 ton, car lots.

BEANS

Jobbers' prices, cwt., recleaned:
Limas .....12.90@13.10
Bayous .....7.50@7.75
Small Whites .....Nominal
Large Whites .....Nominal
Mexican Reds .....7.75@7.90
Blackeyes .....6.75@7.00
Pinks .....7.40@7.50
Red Kidney .....Nominal
Cranberry .....Nominal
Teparies .....7.00@7.50

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....17@20
Amber extracted 16
White comb, cs. .....4.50@6.00
Light amber comb, cs. .....3.50@4.00
Beeswax .....32@34

HAY

Under date of October 4, Scott, Magner & Miller says:
Receipts past week, 764 tons. One might state that there has been no market during the week and receipts of dry hay have been decidedly small. This wet hay has been sold according to the amount of damage shown. There has been some inquiry the latter part of the week for hay "in order" and no doubt a few arrivals of this kind would sell in excess of our quotations. But until such time as the damaged hay ceases to arrive and the dry hay commences to be drawn from the warehouses it will be very difficult to give a range of prices.
In the country districts grass was never known to be in finer shape than at present. The ranges resemble springtime. Stock men are all happy as they can see feed ahead for their stock. So the rain although it did a large amount of damage, to some has been of great benefit.
We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.
Fancy Wheat Hay
(light 5 wire bales) .....27.00@28.00
No. 1 Wheat or Wheat and
Oat Hay .....24.00@26.00
No. 2 Wheat or Wheat and
Oat Hay .....21.00@23.00
Choice Tame Oat Hay.....25.00@27.00
Other Tame Oat Hay .....21.00@23.00
Wild Oat Hay .....19.00@23.00
Barley Hay .....19.00@23.00
Alfalfa, first cutting .....16.00@20.00
Alfalfa, second cutting .....22.00@24.00
Stock Hay .....18.00@21.00
No. 1 Barley Straw, bale .....50@80
Damaged Hay (all kinds) .....Nominal
Hemp .....Nominal

Citrus Fruit Market

Los Angeles, October 9, 1918.

California is still shipping high quality Valencias. Scattering sales as high as $11.00 have been made. Some f. o. b. sales are being made around $7.50. Less than 300 cars are yet to go.
Lemon market slightly stronger.

Shipments

Shipments of citrus fruits to date since November 1, 1917: Southern California; oranges 14,014 cars, lemons 5657, total 19,671. To same date last season, oranges 39,124, lemons 7569, total 46,693. Central California this season; oranges 2536, lemons 115, total 2651. Last season to same date; oranges 4665, lemons 164, total 4829. Northern California; oranges 203, last year same date 845.

WEATHER CONDITIONS

San Francisco, Cal., October 5, 1918.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	.34	2.17	1.74	64	50
Red Bluff	.46	7.85	1.04	82	58
Sacramento	.30	3.88	1.62	82	52
San Francisco	.12	2.66	.40	70	54
San Jose	.11	6.44	.48	78	52
Fresno	.27	.59	.40	84	60
San Luis Obispo	.80	1.47	.59	80	58
Los Angeles	.00	.66	.11	94	66
San Diego	.34	.53	.11	92	68

Our Fertilizer booklet will be sent on application. Our Agent is at your service.

Hauser Packing Company, Los Angeles, U.S.A.

Fertilize! *Fertilize!*

Hauser's Organic Fertilizers

Blood, Bone, Tankage

properly applied will increase your crop production. It's your patriotic duty to do this for bumper crops are necessary in OUR COUNTRY'S program of winning the WAR.

HAUSER'S ORGANIC FERTILIZERS are high-grade plant foods from the best organic sources. We have the right material and equipment to prepare Fertilizers to give the best results under California conditions.

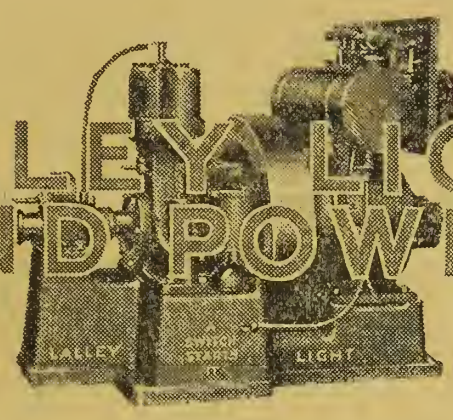
Our Service Department will help you with your Fertilizer problems. Write for our booklet, FERTILIZER EFFICIENCY.

Hauser Packing Company

Los Angeles, U.S.A

When writing advertisers, mention The Cultivator.

LALLEY LIGHT AND POWER



Pays for Itself by the Work It Does

Owners who make full use of its power possibilities, regard Lalley-Light as a paying investment.

It actually does pay its way because it saves much farm labor by furnishing power to do the work.

It is on duty, and ready for work—morning, noon and night — 365 days in the year. By government statistics, it is the one farm labor-saving device that is useful through the entire year.

Lalley-Light power churns butter and separates cream. It pumps water all over the house and to the barn. It runs a washing machine and a vacuum cleaner.

Its sure, safe light saves time in the barn mornings and evenings—in addition to wiping out the oil-lantern danger entirely.

Lalley-Light is a real farm helper in these ways no less than through the comforts and conveniences it brings.

It is easy to see that it soon begins to pay for itself; and finally returns a real dollars-and-cents profit.

The farm labor situation promises to be more acute next year than it was in the busy season just passed.

Lalley-Light's aid is well-nigh as important as the tractor's aid

See the nearest Lalley-Light merchant. He can show you, in figures, how Lalley-Light will pay for itself in a short time.

Write us, if you do not know his name, and we will send it, with Lalley-Light literature.

Lalley Electro-Lighting Corporation

774 Bellevue Avenue, Detroit, Michigan

Distributors:

Weinstock Nichols Co., 1211 S. Olive St., Los Angeles, Cal.

Weinstock Nichols Co., 538 Golden Gate Ave., San Francisco, Cal.

LALLEY-LIGHT

THE ELECTRIC LIGHT AND POWER FOR EVERY FARM

Unarmed Arms of the Service

Men from the battle front who have been holding the line for months and years complain of the monotony of war. The soldier's life in the trenches soon ceases to be a novelty and becomes a tedious routine.

The morale of the army is of supreme importance and the greatest military authorities of the world are enthusiastic in their praise of the organizations which make it their business to keep the soldier in good spirits.

This work, like that of the Signal Corps, has been more highly developed in this war than ever before. Huts for amusement, comfort and recuperation of the fighting men are in the trenches as well as behind the lines. The unarmed workers go about their duties under shell fire as coolly and as self-forgetfully as the telephone men of the Signal Corps who are frequently their neighbors, and who keep intact, often under a hail of bullets, the indispensable lines of communication.

It is for us who remain at home to support these unarmed heroes to the utmost, with our gifts, our labor, and our unbreakable morale.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

TEAGUE QUALITY

CITRUS TREES

AWARDED THE GOLD MEDAL AT FOUR INTERNATIONAL EXPOSITIONS.

For Productive values, fine quality of fruit and vigorous growth Teague's bud-selected, (pedigreed) properly trained and carefully handled orange and lemon, pomelo and lime trees are the trees to plant. An experience covering a third of a century warrants the assertion that **Teague Quality Citrus Trees** possess these qualifications in a superlative degree. All the standard commercial sorts, and garden and ornamental varieties; the largest assortment of citrus trees in America. . . . We invite correspondence from intending planters. . . . Consultations on citrus planting by appointment. 1918 Price list just out; send for a copy.

The R. M. Teague Citrus Nurseries

Box 67, SAN DIMAS CALIFORNIA

FOUNDED IN 1889 AT IT 29 YEARS

Alfalfa Seed

Common Variety 20c. per lb. Smooth Peruvian 27½ c. per lb.
Hairy Peruvian 39c. per lb.

S-E-L-E-C-T-E-D S-E-E-D

Delivery to You by Prepaid Freight

Delay Buying Until You Have Compared My Samples With Seed Others Offer

E. F. Sanguinetti Yuma, Arizona

The Line of Convenience
TO THE
Liberty Fair
October 12 to 26

Fast
Comfortable
Convenient
Dependable

NORTH

Between
Interurban
Points and
Los Angeles

WEST — PACIFIC ELECTRIC (COMFORT-SPEED-SAFETY) — EAST

SOUTH

Orange Empire Trolley Trip
To Riverside, San Bernardino, Smiley Heights and Redlands
$3.50

Mt. Lowe
World's Most Famous Mountain Scenic Trolley Trip
Round Trip Fare
$2.00

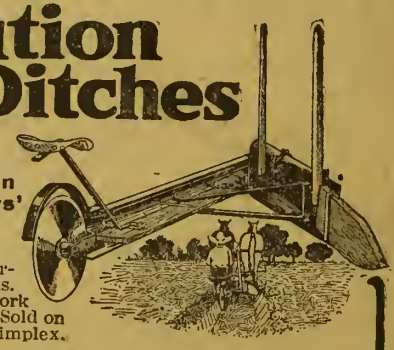
Pacific Electric Railway
O. A. Smith, General Passenger Agent
Los Angeles

Cuts Irrigation Ditches

This implement cuts irrigation ditches, laterals and other ditches, quicker, cheaper and better than any other machine ever built. It's the

Simplex DITCHER-TERRACER

Sent on 10 days' Trial



Cuts V-shaped ditch up to 4 feet. Builds terraces, levels and scrapes land, grades roads. Light draft. All steel; reversible. Does work of 100 men. Write for catalog and prices. Sold on money back guarantee. You will want a Simplex.

SIMPLEX FARM DITCHER COMPANY, Incorporated, Box 76, Owensboro, Ky.

B. Hayman & Co., Los Angeles.
H. C. Shaw Company, Stockton.

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Built Especially for California Conditions

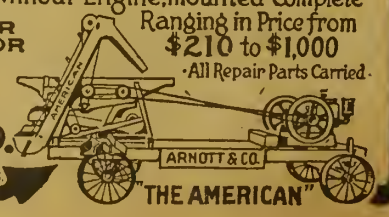
THE FARQUHAR VIBRATOR SEPARATOR

Past the Experimental Stage
Eleven different models, with or without Engine, mounted complete
Ranging in Price from $210 to $1,000
All Repair Parts Carried

Guaranteed by "The House of ARNOTT"
Ask The Grower Who Owns One
Write for Folder, Specifications, Prices Etc.

QUALITY ARNOTT GUARANTEED

ARNOTT & CO.
BEAN THRESHER HEADQUARTERS
112-118 So. Los Angeles St. Los Angeles.



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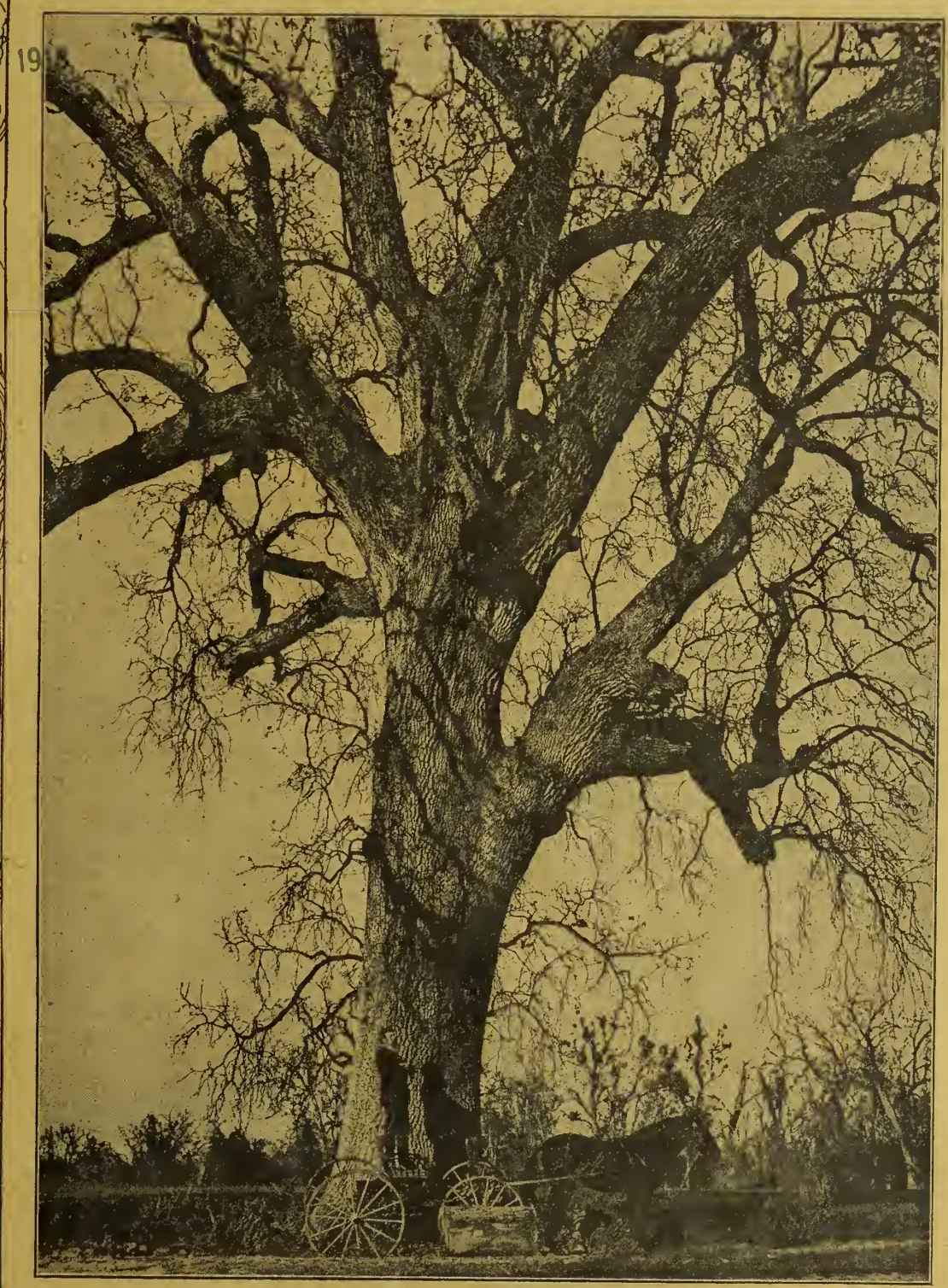
OCT 23 19

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — October 19, 1918 — No. 16



Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877 Combined with California Cultivator 1914. Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916.

Published By
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Frank H. Thomas, Pres. and Manager.
R. M. Teague, Vice-President.

C. B. Messenger, Editor.
R. P. Royce, Live Stock Editor.
C. L. Hughes, Associate.

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J. A. Koethen — D. F. Reichard
Ernest Braunton — J. B. Neff
J. W. Mills — Louis B. Stanton
Dr. Wm. Petrie — W. S. Guilford

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Copy for change of advertisements must be in the office on Saturday preceding date of issue. New advertising copy must reach the office not later than Tuesday to insure insertion.

Advertising rates furnished on application.

The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

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Eastern Offices:
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S. E. Leith, Fifth Avenue Building, New York
C. A. Cour, Globe Bldg., St. Louis, Mo.

Entered at the Post Office at Los Angeles, California, as Second-Class Matter.

Saturday, Oct. 19, 1918

OUR ADVERTISERS RELIABLE

We guarantee our subscribers agalnst loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

Quercus lobata or, if preferred, valley oak, California white oak, weeping oak, or, as called by the early Spanish-Californians, roble, occurs in California from Los Angeles County north, more particularly in the great central valley. It is one of our most beautiful native trees. The largest one in the state is in Round Valley. It is 150 feet in height and nearly 25 feet in trunk circumference four feet above the ground. The cover this week gives an idea of the majesty and wonderful beauty of the valley oak.

LIBERTY FAIR

The Spanish influenza has reached the coast. It has created havoc in all kinds of plans made by men. The results of the disease are not so serious as was feared, this probably largely because of the strong hand taken by health authorities of nation, state and municipality. Quarantines have been established; public meetings are taboo; fairs and all kinds of public events postponed.

The city of Los Angeles took action on the very eve of the opening of the Liberty Fair. Men and women had planned and worked for the past year in preparation for the first agricultural fair to be held in Los Angeles for nearly a score of years. Most of the exhibits were at least in part installed, and carloads of live stock were on tbeir way, some from distances of over 2000 miles. The exhibit of the government was ready for installation, as were many large shows and spectacular attractions.

But the boys in the cantonments and, in fact, national efficiency in every activity must be protected, and it was a moment almost tragic in the council chamber of the city of Los Angeles, filled to capacity, when the order was made that no pubic gatherings should be permitted. Los Angeles people are true sports, and after it was determined that the government exhibit and the live stock, some of which had been brought for 2000 miles, would wait a later date, it was determined to still hold a fair. It will be a great fair.

STRENGTENING LINES

The Cultivator's fight for more live stock and greater food production has resulted in adding to its force one of the best qualified live stock men of the West, Ralpb P. Royce, a graduate of the University of Missouri, for three years live stock field man with the Missouri Farmer and for the past two years assistant professor in the animal husbandry division of the University of California, who has taken work on the Cultivator force.

Mr. Royce has no promises, other than to do his best, but we know from commendations which come from our best live stock people that California live stock interests in general, especially the Cultivator, will be benefited by this strengthening of our lines.

POINTS FROM THE MESSAGE

"It must be clearly understood that the process of evacuation and the conditions of an armistice are matters which must be left to the judgment and advice of the military advisers, and no arrangement can be accepted which does not provide absolutely satisfactory safeguards and guarantees of the maintenance of the present military supremacy of the armies of the United States and the Allies.

"Neither the government of the United States nor the governments with which the government of the United States is associated as belligerents, will consider an armistice so long as the armed forces of Germany continue the illegal and inhumane practices which they still persist in. At the very time that the German government approaches with proposals of peace its submarines are engaged in sinking passenger ships at sea, and not tbe ships alone, but the very boats in which their passengers and crews seek to make their way to safety; and in their present enforced withdrawal from Flanders and France the German armies are pursuing a course of wanton destruction which has always been regarded as in direct violation of the rules and practices of civilized warfare. Cities and villages are being stripped of all they contain, often of their very inhabitants. We cannot be expected to agree to a cessation of arms while acts of inhumanity, spoliation and desolation are being continued which we justly look upon with horror and with burning bearts.

"It is necessary also, in order that there may be no possibility of misunderstanding, that the President should very solemnly call the attention of the government of Germany to the language and intent of one of the terms of the peace which tbe German government has now accepted. It is as follows: 'The destruction of every arbitrary power anywhere that can separately, secretly and of its single choice disturb the peace of tbe world; or if it cannot be presently destroyed, at least its reduction to virtual impotency.'

"The power which has hitherto controlled the German nation is of the sort here described. It is within the choice of the German nation to alter it. The President's words just quoted naturally constitute a condition precedent to peace, if peace is to come by the action of the German people themselves."

AN EXPENSIVE TRIP

The most expensive trip in all the world's history is being made today by one Uncle Sam and a few of his friends. It is a trip which is costing billions of money and the lives of millions of the earth's finest. Every day of delay increases these awful costs. Every shortage of supplies or of funds increases that delay. The American people have been appealed to, and the request, rather the command, is made that each shall do his share. And it is hoped that at least one-fourth, or 25,000,000, will heed. The time set for the final answer is midnight of next Saturday. The six billions has as yet, the middle of the week, been met by subscriptions totaling less than half of that amount.

The need is great; it is imperative that this command shall be obeyed. He who can afford one Liberty Bond and buys it is more of a patriot than he who can afford to buy 100 and buys 99. It is presumed that the next few weeks of this world war will be the bitterest of all. The Huns are desperate and it appears from incidents of the past week they will stop at no barbarity.

Everyone who has bought all he possibly can should buy still more. The greater the over-subscription, the more powerful the effect. So let us buy to support our government and to end the war more quickly, and as to our security, bear in mind that a Liberty Bond is as strong as all the banks and all the farms, all the mines, all the factories, all the people and all the power of the strongest nation on earth.

This Week's War Notes

American casualty lists often run above a thousand per day.

A quarter of a million refugees are leaving eastern Belgium for Holland.

The Bolshevik government at Moscow has agreed to release British officials who have been imprisoned.

Rumors by way of London indicate that the kaiser, Prince Max and the crown prince are ready to quit their jobs.

Regardless of peace notes Secretary to the President Tumulty announces: "The government will continue to send 250,000 men with their supplies every month, and tbere will be no relaxation of any kind."

Tbe Allies are still advancing in Serbia and practically control the line of communication between Berlin and Constantinople. During the past week Nish and other important points have been captured by forces of English, Serbs, Italians and Greeks.

The Italians are again in action, having won several advantages on the northeastern Italian front. They have occupied Durazzo in Albania and are pressing north along the Adriatic. They are also giving material aid to French and English troops in Serbia.

The submarine campaign has been pressed more ruthlessly than for many months. Secretary Daniels appeals for greatest speed in finishing of destroyers and sub chasers. Sir Eric Geddes of England says that the menace is greater today than it ever was that is, in the effort on the part of the Germans. There must be still more strenuous campaign against these vipers of the sea.

One of the most tragic events of the entire war was that of the sinking of the transport Otranto in collision with the steamer Kashmir. Nearly 400 American boys went to the bottom in the terrible storm which prevailed. Highest praise is given to the captain and men of the British destroyer Mounsey, which dared almost certain destruction in its effort to save men from the sinking vessel.

Berlin is in chaos as the people realize that the kaiser's "peace" program has been rejected because it was practically a camouflaged war movement. Socialists are bolder than ever. and demands are made, according to fairly well authenticated reports, that the government shall become one in which the common people shall be given justice. On the other hand, the militarists intend to make the war more revengeful and brutal than ever. During the past week two vessels, the Ticonderoga and the Leinster, were sunk, and in both cases men, women and children in rowboats were fired upon by the submarines, even survivors clinging to overturned boats and rafts were ruthlessly killed. The number of lives lost on the Leinster alone was 480.

Notwithstanding continued storms on the western front are making thin mud in Flanders the Belgians under direct command of King Albert, and the English are driving ahead and threatening Ostend and Bruges and other near coast points held by the Germans. South of Lille terrific bombardment and continual advance is reported and the wedge is driven deeper into the German lines every day. At the present rate of advance Eastern France will practically be cleared of enemy troops within a few days. On Tuesday alone British and French troops captured 10,000 prisoners and more than 100 large guns. At the extreme southern end of the line, especially near Metz, the Americans have been busy strengthening positions but have made no general advance. North of Rheims, however, the Americans have been aiding the French in forcing wedge into German lines.

"The German government has accepted the terms laid down by President Wilson," was the declaration of Solf, German state secretary of the foreign office. However, "the German government suggests" that a mixed commission be appointed for making necessary arrangements for evacuation. President Wilson did not think it advisable to negotiate regarding any commission and replied to the German note in a very short time, leaving evacuation, armistice, etc., entirely to the judgment of military advisers and further stating that neither the United States nor any of its allies will consider an armistice "so long as the armed forces of Germany continue the illegal and inhuman practice which they still persist in." The President not only accuses them of being murderers but common thieves in the stripping of cities and villages of all tbey contain, often of their very inhabitants. The President further demanded "the destruction of every arbitrary power that can separately, secretly and of its single choice disturb the peace of the world." The Austrian and Turkish appeals have not yet been answered.

Southern California Fair at Riverside

By R. P. Royce

IF THE management of any district or county fair aspires to the reputation of having the best fair in the state it will be necessary to stage a better show than the Southern California Fair held at Riverside October 8-12.

The fair just closed was a record breaker in several ways. The gate receipts held up with those of last year and the livestock exhibit registered an overflow. Plans had been made to take care of increased entries in the live stock department, but with the closing of the entries it was found necessary to provide additional space.

Aside from the usual string of side shows, there was a distinct educational atmosphere noted throughout the various departments. Exhibits from the different farm centers, a boys' judging contest, a pig feeding contest, the exhibit from the cow testing association and lectures on questions of interest to farmers and their wives, all served to lift this fair out of the "pumpkin" class.

A feature not noted at other fairs was the Patriotic Tent. This tent was given over to the exhibits and activities of twenty-three war organizations.

This year spectators were provided with a comfortable place from which to watch the judging of the live stock classes. The fair management has erected a covered judging arena with several rows of seats. The arena is divided into two rings in order that two kinds of stock may be judged. The rings are a bit small, but are a vast improvement over the usual accommodations.

Agricultural and horticultural exhibits filled a large tent. Displays from the farm centers at Glen Avon, Hemet, Fruitvale, Little Lake, Nuevo, Palo Verde Valley, Perris Valley, Elsinore, Chino and Grand Terrace competed for prizes.

Larger exhibits of tractors and farm implements have been noted at other district fairs, but the Riverside exhibit was quite creditable.

The success of the fair is no doubt due to the efficient secretary, R. L. Taber, and to the capable department superintendents.

THE LIVE STOCK SHOW

The outstanding feature of the fair was the splendid exhibits of live stock. Every department except the sheep showed substantial gains both in numbers and quality. Nearly 250 hogs were in the pens.

Herds of Holsteins, Jerseys, Guernseys and Ayrshires made a well balanced exhibit of dairy cattle. Three exhibitors of Shorthorns competed. The horse department was particularly strong for a district fair. The show of milk goats was said to have been the best ever held on the coast. The fair management is to be congratulated on the live stock show.

Much interest was manifested by visitors and from the questions asked the judges and the exhibitors, the ranchers and fruit men of Southern California are giving serious thought to the part live stock can take in their operations. The time will soon come, if it is not already at hand, when the matter of soil fertility will become a problem, the solution of which will rest to a very large extent on a system of farming wherein live stock is maintained.

F. H. Scribner of Los Angeles judged the horses, cattle and sheep. Walter Gatton of Los Angeles judged all the hogs. L. A. Bridinger of Santa Rosa passed on the goats.

The Shorthorns

The Maxwell-Miller cattle from Colorado were furnished competition in most of the classes by the F. P. Hall herd from Perris, California. The Eastern entries had little trouble in winning their classes, as the Hall cattle were not fitted. This herd showed a number of well bred young things that were handicapped through lack of fat.

Judge Scribner made several changes in the ratings given the Colorado cattle at Fresno. The senior bull calf, Beauty's Dale, was made champion over the two-year-old Princely Stamp and looked quite well with the purple. The placing of the Maxwell-Miller senior yearling heifers was another surprise. The judge preferred the thicker roan, Clear Spring Susan, to the stronger top and sweeter head of the white, O. J.'s White Gloster. The winning heifer was later made champion over the good two-year-old and also the very attractive senior calf, Flora of Anoka. This calf was champion female at Fresno and was picked to repeat at Riverside.

Exhibitors were: Maxwell-Miller Cattle Co., Steamboat Springs, Colorado; F. P. Hall, Perris; Frank E. Collier, Wildomar.

Awards: Bull, two years old and under three—Princely Stamp, Maxwell-Miller. Bull, junior yearling—1 and 2, Susan's Earl and Gainford Butterfly, Maxwell-Miller; 3, Avon, Hall. Senior bull calf—1, Beauty's Dale, Maxwell-Miller. Junior bull calf— 1, Maxwell-Miller; 2 and 3, Hall. Champion bull—Beauty's Dale, Maxwell-Miller. Aged cow— 1, Eliza Broadhooks 2nd, Maxwell-Miller; 2 and 3, Proud Blossom and Adelaide's Pride, Hall. Cow, two years old and under three—Cloverleaf Lovely 2nd, Maxwell-Miller. Senior yearling heifer— 1 and 2, Clearspring Susan and O. J.'s White Gloster, Maxwell-Miller. Junior yearling heifer— 1 and 2, Hillshade Beauty and Mina Marigold, Maxwell-Miller; 3, Ara-Bella's Gem, Hall. Senior heifer calf—1, Flora Anoka, Maxwell-Miller. Junior heifer calf— 1, Collier; 2, Hall. Champion cow or heifer— Clearspring Susan, Maxwell-Miller. Aged herd— 1, Maxwell-Miller. Young herd— 1, Maxwell-Miller; 2, Hall. Get of sire— 1, get of Royal Archer Sultan, Hall. Produce of dam— 1, produce of Overbrook Susan 2nd, Maxwell-Miller.

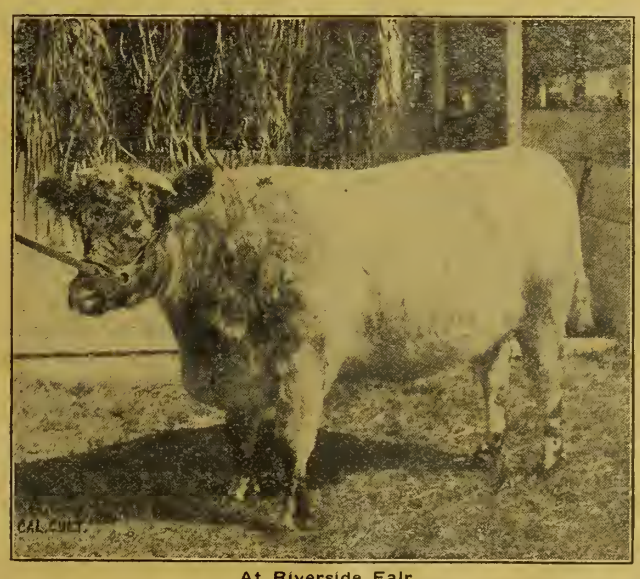
The Holsteins

The Holstein classes were comfortably filled with entries from five local herds. The McAlister & Son entries were the heaviest winners. The senior calf, King Alcartra Prilly Nadine, was champion bull, and the aged cow Miss Korndyke Mercedes was champion female. Stalder Bros. furnished rather strong competition in most of the younger classes. The entries from the George Junior Republic attracted considerable attention. This institution is laying the foundation for one of the good herds of the South.

Grand Champion Stallion
Exhibited at Riverside Fair by F. L. Hall, Perris.

Exhibitors: McAlister & Son, Chino; Stalder Bros., Riverside; E. K. Stalder, Nuevo; George Junior Republic, Chino; Grandview Dairy, Corona.

Aged bull— 1, King Winnie, McAlister & Son; 2, King Clyde Korndyke, Grandview Dairy. Bull, two years old and under three— 1, Director Spofford Klondike Lad 5th, George Junior Republic. Bull, senior yearling— 1, Prince Lill Walker, E. R. Stalder. Bull, junior yearling— 1, Rosamaine's Pontiac Netherland, Stalder Bros. Senior bull calf— 1 and 2, King Alcartra Prilly Nadine and Korndyke Segis Neva, McAlister & Son; 3, Rosamaine's Spofford, Stalder Bros. Junior bull calf— 1, 2 and 3, King Sadie Vale Oakland, St. Rachel Segis, St. Vera Segis, McAlister & Son. Grand champion bull— King Alcartra Prilly Nadine, McAlister & Son. Aged cows— 1 and 2, Miss Korndyke Mercedes, Allenvail Clothilde Walker, McAlister & Son. Cows, two years old and under three— 1 and 2, Miss Pontiac Model De Kol and Lady Woodcroft Pietje, McAlister & Son. Senior yearling heifer— 1, Blanche Segis Walker, Stalder Bros.; 2, Snowflake Juliana of Rock, George Junior Republic; 3, Hartog Creamelle De Kol 2nd, McAlister & Son. Junior yearling heifer — 1, Abbekerk Pontiac, Stalder Bros.; 2 and 3, Lady Newtonia Sadie Vale and Korndyke Sadie Vale Crane, McAllster & Son. Senior heifer calf— 1, Duchess Korndyke Sadie Vale, McAlister & Son; 2, Ida DeKol Lyons, George Junior Republic; 3, Rosamaine's Pontiac Gold Drop, Stalder Bros. Junior heifer calves— 1 and 3, St. Changeling Wildwood and St. Canary Segis, McAlister & Son; 2, Rosamaine's Segis Ormsby, Stalder Bros. Grand champion cow— Miss Korndyke Mercedes, McAlister & Son. Aged herd— 1, McAlister & Son. Young herd— 1, Stalder Bros.; 2, McAlister & Son. Calf herd— 1, McAlister & Son; 2, Stalder Bros. Get of sire— 1, McAlister & Son; 2, Stalder Bros. Produce of dam— 1, McAlister & Son; 2, Stalder Bros.



At Riverside Fair
Clear Spring Susan, champion Shorthorn cow exhibited by Maxwell-Miller Cattle Company, Colorado.

Jerseys

The herds of Wherrell, Thorp and Miller had previously met at Sacramento under the same judge, so naturally most of the state fair ratings were not changed. The herd of Geo. W. Thomas sprang several surprises in the young classes and made an excellent showing.

Miller's aged bull, Altama Interest, was again placed ahead of Thorp's Imp of L. Thomas showed a good two-year-old bull into second place.

Five senior bull calves made one of the strongest classes of the show. The Wherrell state fair junior champion, Golden Legacy's Champion, met a real competitor in Knight of Golden Glen, shown by Thomas. The judge took considerable time to make up his mind and in the end liked the front and style of the Wherrell calf. The third calf was recently brought out from the East.

The class for aged cows brought out five real tops. The first two held the same rating given them at all the fall shows. Valet's Golden Biddy was placed below Beauty of Walnut Park, a cow of more constitution but showing quite lame from a spavin.

The junior heifer calves were headed by Mary of Fuimus Farms, who was junior and reserve grand champion at Sacramento.

Miller's Altama Interest was champion bull and Thorp's aged cow was champion female.

Exhibitors were: J. E. Wherrell, Riverside; J. B. and J. E. Thorp, Lockeford; Guy H. Miller, Modesto; Geo. W. Thomas, Arlington; C. Sturzenegger, Claremont.

Awards: Aged bulls— 1, Altama Interest, Miller; 2, Imp of L., Thorp; 3, Merry Maiden's Conquest, Sturzenegger. Bull, two years old and under three— 1, Jolly Senator Raleigh, Thorp; 2, Walnut Park Noble, Thomas. Bull, one year old and under two— 1, Jap's Perfection Owl, Miller; 2, Lilly's King of L., Thorp. Senior bull calf— 1, Golden Legacy's Champion, Wherrell; 2, Knight of Golden Glen, Thomas; 3, Priscilla's Oxford Prince, Wherrell. Junior bull calf— 1, Miller; 2, Thorp; 3, Thomas. Champion bull— Altama Interest, Miller. Aged cows— 1, Salome of Mossdale, Thorp; 2,Goldie of Venadera, Miller; 3, Beauty of Walnut Park , Wherrell. Cow, two years old and under three— 1, Angela of Venadera, Miller; 2, Nomie of Mossdale, Thorp. Cow, one year old and under two—1, Lucille of Venadera, Miller; 2 and 3, Bess of Mossdale and Lass of Mossdale, Thorp. Senior heifer calf— 1, Kate of Fuimus Farm, Wherrell; 2, Raleigh's Lady Grace, Thomas; 3, Fair Salome of Mossdale, Thorp. Junior heifer calf— 1, Mary of Fuimus Farm, Wherrell; 2, Thomas; 3, Thorp. Champion cow— Salome of Mossdale, Thorp. Aged herd— 1, Miller; 2, Thorp. Young herd— 1, Miller; 2, Thorp. Calf herd— 1, Wherrell; 2, Thomas; 3, Thorp. Get of sire— 1, get of You'll Do Oxford Lad, Wherrell; 2, Miller. Produce of dam — 1, Thorp; 2, Thomas.

Guernseys

The show of Guernseys was not as well balanced as it should have been. The Hollow Hill Farm entered a full herd, and lost only the bull championship, the aged bull class and the senior bull calf.

Exhibitors were: Hollow-Hill Farm, Colton; Grandview Dairy, Riverside.

Continued on Page 398

Agricultural News Notes of the Pacific Coast

Northern California

Olive pickling has begun in the factories at Oroville.

Mendocino's wheat yield is 100 per cent above last year's.

Yolo County is asking for the appointment of a home economics director.

The Antelope district of Placer County has shipped six carloads of almonds.

A campaign for greater production of honey is to be carried on by the farm bureau of Butte County.

International Livestock Show at San Francisco, November 2-10. Thirty thousand dollars in premiums for pure bred stock.

Napa County reports that 25 per cent of her prunes have been rotting owing to the damp weather that followed the rains.

Another unit of the state colony at Durham is about to be opened for settlement according to announcement made by Dr. Mead.

Steps are being taken to more thoroughly organize the live stock interests of members of the El Dorado County farm bureau.

There are 6,430 acres planted to prunes in Butte County. Almond orchards show the next largest acreage, 5,765; olives come third with 5,080 acres.

The Sacramento Union is authority for the statement that warehouse facilities are available for only 25 per cent of the rice crop of the Sacramento Valley.

There was a very large exhibit of pigeons at the Pacific Coast Land and Industrial show held in Oakland last week. Nine hundred and eleven birds were shown.

Local farm bureau meetings will be held in Placer County at Long Valley, October 19; Gold Hill, 21; Colfax, 23; Mount Vernon, 26; Roseville, 28. All meetings at 8 p. m.

Albert Lindley, chief of the department of emergency crop production of the state council of defense, says that this year will see an increase of 100,000 acres in wheat plantings in this state.

Sheep and goat breeders of El Dorado County have formed an organization. The farm bureau of that county is working toward the forming of a pool of all wool and mohair stocks for sale to the government.

Dr. Elwood Mead says that the state land colony at Durham is proving a complete success and urges the necessity of the national government providing some similar means of placing returned soldiers on the soil.

A. L. Wisker, pear grower of Nevada County, is studying problems of pear blight eradication at the Oregon experiment station. The ravages of pear blight in Nevada County orchards were severe last summer.

Secretary Beard of the Sacramento Valley Development Association states that he is assured the federal government will appropriate $400,000 toward the construction of the Feather River highway—after the war, of course.

Sonoma County's fair announced for October 11 and 12 was indefinitely postponed. The damage caused by the heavy rains to grapes, prunes and other fruit crops throughout the county is given as the main reason for the postponement.

Central California

Much alfalfa hay was damaged by rains in Mono County.

Seven farmers of the Pajaro Valley are now constructing silos.

Fig growers of Dinuba expect to secure record prices for this season's crop.

The Tejon Ranch of Kern County is planning to put in 30,000 acres of wheat.

Bakersfield dairymen put up milk prices two cents per quart on October 1.

Many raisin growers have saved much of their rain damaged crop by sulphuring.

San Benito County stockmen are happy over green pasturage already showing up.

Sheep are rapidly being taken from summer ranges of Mono County to valley pasture.

Hogs sold at the recent farm bureau auction at Wasco, Kern County, brought $14,139.

Forty thousand cases of Porterville canned tomatoes have been taken for army requirements.

Apples are now going into storage from the Newtown Pippin crop of the Watsonville district.

Stockmen of San Benito County have guaranteed to raise one half the county's Liberty Loan quota.

The Oakdale irrigation district has filed upon 150,000 acre feet of water in the Stanislaus River watershed.

Porterville is now packing pomegranates. The output is estimated at 30 cars, with a net value to the growers of $30,000.

Horticultural Commissioner Rutherford of Stanislaus County is planning a squirrel poisoning campaign for November 1 and 2.

The early October rains caused severe damage to raisin growers of Madera. Much of the crop was saved by hastily erected dryers.

The Tulare Livestock Association is discussing plans for the auction sales pavilion at Tulare. The association plans to have the building ready in time for the November 21 sale.

Grain farmers of Madera County met at the county seat September 28 to form an association. The purpose of the organization is to "encourage better results in grading, packing and marketing."

There will be local farm bureau meetings in Santa Cruz County at Bonny Doon, October 11; Aptos, 18; Soquel, 23; Happy Valley, 25; Santa Cruz, 28. These are all night meetings, beginning at 8:00.

To meet the emergency created by the rains the Valley Fruit Growers Association has established a labor clearing house in Fresno, and all who can possibly help are urged to go out in the raisin vineyards to help in turning. Many stores were closed in Selma, Kingsburg and other raisin centers that storekeepers might assist in the work.

Directors of the newly formed California Farm Bureau Marketing Association, San Joaquin Valley division, including Fresno, Tulare, Kings, Kern and Madera Counties, meeting in Visalia, have named D. H. Bitner, at present manager for the Kern County farm bureau marketing association, general manager and superintendent, to assume his duties at once with Visalia as the central place of business.

Southern California

Yucaipa will hold its apple show November 6-9.

Walnut crop of the Hemet Valley is estimated at 120 tons.

Southern California's walnut crop is estimated at $6,000,000.

Rain damage in the north has sent up the prices on local onions.

Ventura County's bean fields show a largely increased yield over last year.

Orange County's fair, just closed at Huntington Beach, was very successful.

The Hemet Orange Growers Association has declared a dividend of six per cent on stock.

The drop of milo from $72 to $60 per ton is causing much concern to Imperial Valley ranchers.

Farm courses were given for the last Friday and Saturday in September at Orange, Orange County.

Immense flocks of ducks have come into all the southern part of the state. The season opened on the 16th.

There was a big poultry and rabbit exhibit at the Southern California Fair held at Riverside last week.

The Newport Mesa in Orange County is reported to be developing into an excellent apple raising section.

The October meeting of the Glendora farm center was made a trip to the Riverside citrus experiment station.

A short course in beekeeping will be conducted by the state university at San Diego, November 25-30; Riverside, December 16-21.

Egyptian cotton growers of Imperial Valley have formed an organization to provide for the ginning and marketing of the Pima cotton crop.

The farm labor employment association of Imperial County is urging all farmers who will have need of help to file at once orders for Texas laborers.

Honey shippers are finding firm market among confectioners and bakers who are unable to secure enough sugar to meet the demands of their trade.

The Hueneme canning factory is appealing to the food administration for help in finding workers to handle the large amount of tomatoes on hand and ready for canning.

Local farm bureau meetings will be held in Imperial Valley at Meloland, October 10; Calipatria, 12; South Fern, 14; East Side, 16; La Verne, 17; Magnolia, 19.

An agricultural short course of two days was given at Brawley, October 1 and 2 when subjects dealing with practical war economics as applied to agriculture were discussed by experts.

Twelve units of 100 women each have been sent into Imperial Valley to assist cotton growers in handling their crops. The women were sent under the supervision of the Half Century Association of Los Angeles. The organizing of men's units is under way.

Local farm bureau meetings to be held in Los Angeles at Covina, Oct. 19; Lamanda Park, 21; Monrovia, Little Rock, 22; Lancaster, 23; Newhall, Owensmouth, 24; Inglewood, Pomona, 25; Burbank, 28; San Fernando, November 1; Glendora, Downey, Clearwater, November 4.

The Coast and General

Texas is short on turkeys, poultry and eggs this year.

Recent rains in Florida have much benefited truck crops.

The experiment station at Tempe, Arizona, is marketing some fine dates.

The market on potatoes at Stockton has been improving in the last few days.

Considerable worm damage is reported to apples of Wenatchee and Yakima districts of Washington.

The total bean crop for the United States this year is estimated at 5,000,000 bushels in excess of the 1917 crop.

Idaho's registered bull law went into effect September 7. None but registered bulls are now allowed on public range.

The authorities have ruled that farm labor in order to secure exemption must show that it is in the skilled class.

The Yakima Fruit Growers Union of Washington has just added 70 names to its membership, making a total of 320.

Sixty-three cents is now being paid for butter fat at Bellingham, Washington. This marks the fourth advanced price in three weeks.

During August 138 special fruit trains, with 5640 cars, were operated through from California to the Missouri River and Chicago.

By federal order Florida grapefruit put on the market must show one per cent of acid to seven total solids. Color is not considered a part of the test for interstate shipment.

Italy has requisitioned agricultural machines of all kinds and materials necessary for their working. This is effective for the period of the war and for the entire agrarian year following peace.

The government has been forced to take over a large proportion of the storage supply of butter and this fact has been taken advantage of by unprinicpled speculators in many sections to force exorbitant prices.

Under the budget of the Hood River Apple Growers Association, just adopted by the directors, a maximum charge of six cents per box for apples and 10 cents for pears may be made for handling the fruit the coming year.

The city council of Reykjavik, Iceland, has now begun the baking of bread in a special bakery in connection with the local gas works, where modern machinery has been installed in a special building to utilize the waste heat.

The Apple Growers Association at Hood River has completed the pack of Bartlett pears, all of which have been shipped to Eastern markets. The yield was only 24 cars, 50 per cent of the estimates of growers. Other varieties are being packed and shipped and the association will soon begin on the apple crop.

Does this mean what it seems to mean? The following extract from the Washington Farmer sounds like the millennium: "Grays Harbor County is in the enviable position of having enough funds in its coffers so there will be no levy this year for current expenses. This is the first time in the history of the county that there has been sufficient cash on hand to omit the tax levy."

Gum and Scaly Bark on Citrus Trees

TIME was when we were all guessing as to the cause of citrus diseases, in fact, we presume the time never will come when we are not guessing as to some of them.

In regard to gum disease and scaly bark there has been much better understanding since Prof. Howard S. Fawcett gave a fund of information in Bulletin 362 of the experiment station of the California college of agriculture. This bulletin is to be had for the asking by writing to the college at Berkeley. This bulletin, "Citrus Diseases of Florida and Cuba Compared with Those of California," gives one an excellent idea of these troubles. We, therefore, give summary of two of the diseases which still prove somewhat confusing to a few. The summary was prepared by Prof. R. S. Vaile, formerly of the citrus experiment station at Riverside, now engaged in relief work in Armenia.

Gummosis of Lemon Trees

The disease known as gummosis or lemon gum disease is characterized by the dying of areas of bark, accompanied by exudation of thickened sap or gum usually somewhere on the trunk from just below the surface of the soil to the forks of the branches. Study of lemon gumming as it occurs in groves shows at least two forms; one in which the dead bark remains firm and is killed to the wood as fast as the area enlarges; the other in which the bark is at first soft, later hardening with sometimes a development of gray fungus on the surface during damp weather. Inoculations have shown the former to be caused by the brown rot fungus, Phythiacistis citrophthera Sm. Sm. and the latter by the gray fungus, Botrytis cinerea. Both of these are common causes of decay in packing houses. Of the two forms of gummosis, the brown rot is by far the more common and it also affects orange trees, though less commonly than lemons.

The brown rot fungus lives in the soil, especially in heavy soils. Its development is favored by excessive moisture. Infection of lemon bark is favored by the bud union being kept buried or damp. Sweet stock is far more susceptible than sour.

The methods of prevention that have been worked out by the most observing growers are based on the producing of conditions unfavorable to the development of these organisms. The following practices have been shown to be of great importance in this connection.

1. All soil should be kept from above the bud union. In fact, the earth may well be permanently removed down to and exposing the crown roots.

2. The ground under the drip of the tree should be kept constantly mellow and not allowed to pack.

3. The soil around the tree trunk should never be excessively wet. Standing water under the trees is particularly to be avoided.

4. In all new plantings, sour orange stock should be used rather than other stocks, especially on heavy soils.

5. High budded trees should be planted and they should be planted at least as high as they were in the nursery.

The treatment for cases where infection has already taken place may be briefly outlined as follows:

Remove the bark that is already dead to a point where the dark brown discoloration ceases. An area may be yellowed beyond the actual infection through the presence of stagnant sap, but such area does not carry the contagion and therefore need not be removed. However, more failures are due to not cutting far enough or deep enough, than to over severe treatment. In case of the gray fungus form it is sometimes only necessary to remove the outer layer of bark, leaving the cambium intact.

Special curved tools may be made that are particularly adapted to gummosis work. Such tools are not on the market at present so far as we know.

After removal of the diseased tissue the cut or scraped surface should be painted with a good disinfectant which will remain as a covering for some time. Bordeaux paste seems best adapted for this purpose. It is a strong fungicide, is not harmful to the tree and when confined to the trunks only, does not seem to produce complications with fumigation as is the case when the entire tree is sprayed.

Gumming may continue for some time after treatment. In fact, Bordeaux seems at times to stimulate this. Such gumming need cause no alarm unless bark continues to die back along the edges. The gum itself is free from infectious material. If dying continues, treatment should immediately be extended.

In severe cases where considerable areas of bark have been removed, the tree should be pruned back heavily to permit more natural and rapid recovery. In such cases it is advisable also to cover the large scars with asphalt dissolved in benzine or with shellac after gumming has ceased.

Formula for Bordeaux Paste

Dissolve one pound bluestone (copper sulphate) in three quarts of water in a wooden or earthen vessel. This can best be done by hanging it in a sack at the surface of the water.

Slack two pounds unslaked lime in about three quarts of water.

Stir together when cool, making a light blue mixture the consistency of whitewash. If the mixture turns to some other color before being applied, it is an indication that something is wrong. Mix up fresh each day or two, as the mixed paste tends to deteriorate. It may be applied with a large brush like whitewash.

This may be used on healthy bark as an additional preventive.

Scaly Bark of Oranges

Scaly bark is in the main limited in its effects to orange trees. The cause of the trouble has not been definitely determined, therefore it is impossible to give absolute control methods. The experience of growers and the results obtained in the experiments of Prof. H. S. Fawcett are, however, conclusive enough to be at least suggestive.

Any improvement of conditions increasing the vigor of the tree will aid materially in its recovery as well as in its ability to resist the disease. Very often the pruning out of one or more limbs will almost completely free a tree from the disease. In such case any badly affected branch, even if it be a main leader, may well be sacrificed.

In what may, for convenience, be called the first stages of scaly bark the outer bark is broken into scales and is pushed up and off over areas varying in diameter from an inch to a foot or more. New tissue forms underneath but this often contains small dry gum pockets in some way connected with the disease.

These small scaling areas enlarge slowly, often existing several years before an area of importance is found. Finally a considerable portion of the circumference of a limb or trunk becomes affected. Only then does the appearance of the foliage become an index to the trouble and in many cases recovery is already very doubtful. This may be called the second stage of the disease. Every orange orchard should be constantly watched so that no cases might reach such a point.

If the disease has gone to the third stage, or so far that the wood underneath is beginning to die, there is probably no practical remedy except to remove the limb affected. In case the main trunk has reached this state it is probably best to remove the diseased tree and reset a healthy one in its place. There is no evidence that the reset will be especially liable to the disease.

The same type of treatment that has proven so efficient against lemon gummosis is apparently quite largely so against the earlier stages of scaly bark. Cut out or scrape off the diseased portions of the bark. Care must be taken to remove all of the diseased tissue. In many instances this will necessitate digging out small pockets through the bark and into the wood tissue. In other cases a light surface scraping will answer. A sharp, strong instrument made for the purpose will be found an advantage.

After removal of the diseased tissue, the cut or scraped surface should be painted with a good disinfectant which will remain as a covering for some time. Bordeaux paste seems best adapted for this purpose. It is a strong fungicide, is not harmful to the tree and when confined to the trunks only, does not seem to produce complications with fumigation as is the case when the entire tree is sprayed.

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California's Forests

By Charles H. Shinn

A NEW book about our national forests gives food for rejoicing thoughts in these days of trial and of spiritual growth. It is by Mr. Swain, who is in the forest service of Queensland, Australia, and who has spent a year or more in close study of American forestry. To sum it up he says that we know how; that the fellowship, the loyalty and the knowledge of our foresters are wonderful. Everywhere he found "mutual trust and cooperation and esteem." Lastly he recommends a reorganization of the Australian forest service on principles based upon the American methods.

In these war times there is hardly anything more thrilling than the way in which forest publications show the atmosphere of courage. From Canada, South Africa, India and all the English-speaking countries, especially from old Scotland, comes with tremendous force the united systematic resolve to get more out of forest resources, to have forests which are much better and much nearer to the everyday life of the people. Foresters with fewer men and fewer dollars are somehow doing more work for the world and are rising nobly to the situation. England, Scotland, France, Canada, America and the rest of the world have been taught by war the necessity of forests to civilization—of home forests, of having timber, fuel, wood pulp and all that the forests yield within reach.

If this new recognition of forest value continues to develop after the war, the game producing and esthetic sides of forests will be subordinated to practical considerations. That is what the Scottish "Journal of Agriculture" is saying this minute.

The lesson of these things for us of California is that "after the war" men and women will come to us from all places of similar climate and conditions to study our forests—men and women because the world which is already in progress of creation will have no end of educated women as leaders. Forestry, like landscape gardening, like scientific agriculture, like everything else one can mention, needs women just as much as men—and has a good many now.

One of the most immediate problems before the forests of California (and many other places) has to do with the now-wasted fuel supplies, the cost of obtaining which is held by experts to be prohibitory. Since some general discussions of this problem have appeared in the newspapers, a little more seems wise.

These are the facts at present as regards most of the Sierras: Local fuel users have been for years approaching more difficult country, and much of the lower foothill areas are now cut over; to get out the maximum fuel supplies from further back and higher up involves in many cases, new road construction, gulching, hauling to central depots and then re-hauling to the valleys. This appears to make the present cost, under the shortage of men and transportation, too great for immediate consideration. Nevertheless, much more fuel can be had even now from the near mountains wherever old roads render "gulching" and two handlings of the load unnecessary.

The possible long continued coal shortage with even higher cost to consumers for coal makes the fullest possible use of fuel supplies in our mountains an economic necessity. Lumbermen, forest engineers and practical men who know mountain conditions are therefore certain to tackle this whole problem until it is solved.

But the fulcrum on which the lever must turn is just this—we must make all of our California forests more accessible. Fuel is only one item, and not the most important one. Timber supplies come first; material for paper making is a big item. When the war is over and our boys come back, a great many of them will find places and the happiest sort of work in the mountains of California. Returned soldiers of the right turn of mind, the right qualifications, will be mighty useful in this work.

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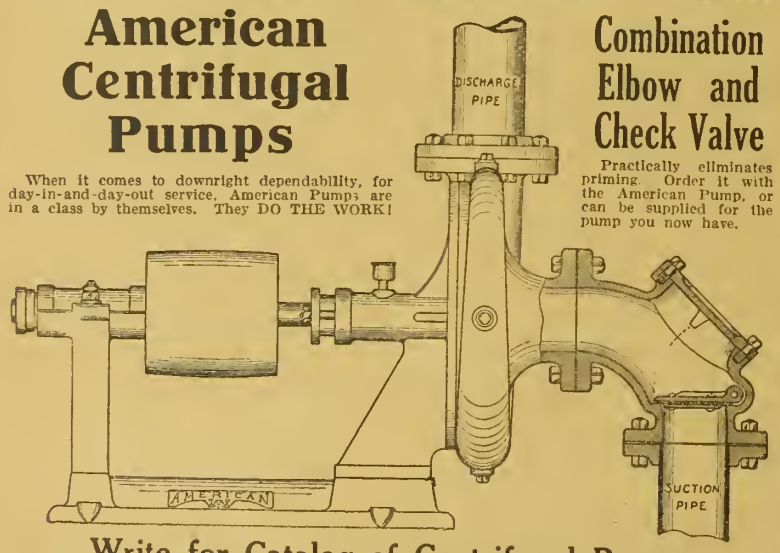

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Give Summer Cover Crop a Chance, or Still More Regarding June Drop

Written for California Cultivator By Robert W. Hodgson

THE June drop problem continually bobs up. The writer had intended saying no more on this subject this season but he cannot forego a few comments on some of the more recent June drop discussions heard in various parts of the state. There is little doubt but that Central California citrus growers are convinced that the June drop constitutes practically the limiting factor to successful Washington Navel orange production. This is evidenced by the tremendous interest shown in discussions of the June drop problem.

In the first place, the writer wishes to correct a few ideas which are prevalent. The conclusions as set forth by Dr. J. Eliot Coit and the writer in bulletin 290 on "The June Drop of the Washington Navel Orange," represent a candid and careful interpretation of data collected in an investigation of this problem extending over a period of two years. While they may not be entirely correct, still they do not constitute a hastily formed "theory" such as the main portion of a number of articles recently appearing on the subject.

June drop is usually due to adverse weather conditions. This is exactly what the Central California citrus grower has felt all the time but the explanation given is so simple he hesitates to believe it when the investigator confirms his ideas. Evidently he is looking for some very complicated, abstruse, technical explanation involving the use of some spray or chemical agent as a remedy before he will be satisfied. The simple fact is that when more water evaporates from Washington Navel orange leaves than they can get from the conducting system of the tree, they turn to the young fruits which constitute a new source of supply. The fruit loses water but is again filled up at night. When the magnitude of this fluctuation in water content reaches a certain point, a chemical process called hydrolysis is started in a certain zone of cells known as the abscission layer, and within a few days the fruit falls off. The same thing precisely holds for certain other plants. This condition has actually been proven in carefully conducted experiments which were published as a paper in the Agricultural Science Series of the University of California last year.

Occasionally there comes a year when a common everpresent fungus finds conditions favorable for its growth in the navel end of the young fruits. It does so, and causes many to fall, those remaining becoming the heart rot oranges found in the packing house. It is so simple it is unbelievable.

The writer has been interested in a recent article on this subject bringing forth a number of objections. He proposes to discuss them somewhat. It should be emphasized that nobody knows better than the writer that the solution of the June drop problem will not be easy. The nature of the cause makes a simple cure or remedy almost impossible. Nevertheless it is felt that promising results have been obtained along several different lines and work along these lines should be continued. Simply admitting the serious nature of the problem will never accomplish anything. The history of progress always has been action.

First, as to the effect of the summer cover crop. Much has been made of the point that we can hope to raise the average humidity in a citrus orchard but little through the use of a summer cover crop. As Jensen has shown, the normal difference in average humidity from year to year may be greater than any possible effect we may hope to get by using a cover crop. This is all very true. But it is not the average humidity which is the important thing. It is not so important that the average humidity has been raised as it is that when extremely hot or dry spells occur the cover crop acts as a buffer and modi-

Wonderful Summer Growth

Buckwheat and vetch. This tremendous growth was successfully turned under with a tractor and double disk. In addition, the horse plow with heavy chain attached will force under the heaviest growth.

fies them sufficiently to enable the young fruits to hold their own. This is the reason why a straw mulch gives much the same results. It, of course, does not raise the average humidity at all but it does help during a heat wave.

Water Very Important

It is of course to be understood by every citrus grower that a summer cover crop uses water, and in considerable amounts. When a grower has to buy all the extra water he can corner just to keep his trees going, everyone realizes that he would be foolish to grow a summer cover crop. And yet it is just such growers who are prone to criticize the summer cover crop, which reminds the writer of the fable of the dog in the manger. Give the summer cover crop a fair chance at least.

Where a man cannot get sufficient water for both cover crop and trees it would be the writer's suggestion that he look into the matter of mulching, and if that cannot be done he should resort to the judicious use of fertilizers to keep his trees in as vigorous and thrifty condition as possible. And this does not mean the addition of potash or sulphur but the liberal use of barnyard manure, dried blood, tankage, or sulphate of ammonia. It has recently become popular to blame everything on the Kaiser but to blame him for the June drop since he won't let us have any more potash seems like just a little bit too much. Who would have ever guessed the depths to his perfidious machinations!

Turning Under Summer Cover Crop

An objection voiced has been that a summer cover crop is hard to turn under and get well incorporated into the soil, the inference being that the summer cover crop must be allowed to mature. This is exactly what should not be done. After the summer cover crop has done its work it should be turned under while still lush and green. This means that it should ordinarily be turned under early in July. The writer has personally had under observation a number of orchards having summer cover crops this season and he has seen no particular difficulty in getting the crop under. It seems to be a question of suitable tools and sufficient power. One man turned under a cover crop of buckwheat and vetch running close to 20 tons green matter per acre quite satisfactorily with a tractor and double disc.

Another criticism is that cutting the feeding roots by the turning under of the crop must cause injury to the trees. No doubt it does somewhat but to nothing like the extent which the turning under of the winter cover crop does. At the period when the winter cover crop is turned under the trees are either about to bloom or in bloom and setting fruit. During the critical period very little shock is sufficient to cause some of the fruits to fall. But after that period is passed, when the summer cover crop should be turned under, under no conditions will the fruits drop. It requires a number of pounds pull to separate them from the trees. All growers realize that allowing the trees to suffer for water later in the season is much less dangerous than at the period of setting fruit.

Many growers prefer to plow a cover crop under. The writer prefers to disc it under, going over the orchard a number of times to get the material well incorporated into the soil. This is particularly desirable for the summer cover crop, plowing being more desirable for the winter crop to get it down deep where the feeding roots are located.

The objection has been raised that a summer cover crop prevents cultivation. We all know that in our hot dry climate the farmer is in quite a dilemma with respect to this practice. If he does not cultivate he loses his water; if he does he loses his humus. If a man has enough water for the cover crop it is not difficult to see that by the use of such a crop he gains in two ways, both by adding humus and by preventing the loss of that already present.

Essentials in Handling Summer Cover Crop for June Drop

1. You must have sufficient water to grow it, which means water in addition to that required by the trees.
2. It must be planted early in order to cover the ground within several weeks after the blooming period. An ordinary bean crop will not do this satisfactorily as it is planted too late.
3. It must thoroughly cover the ground during as much of the critical period as possible.
4. When its work is done it should be incorporated into the soil while still green and succulent.

Do not condemn the summer cover crop nutil you have given it a fair trial.

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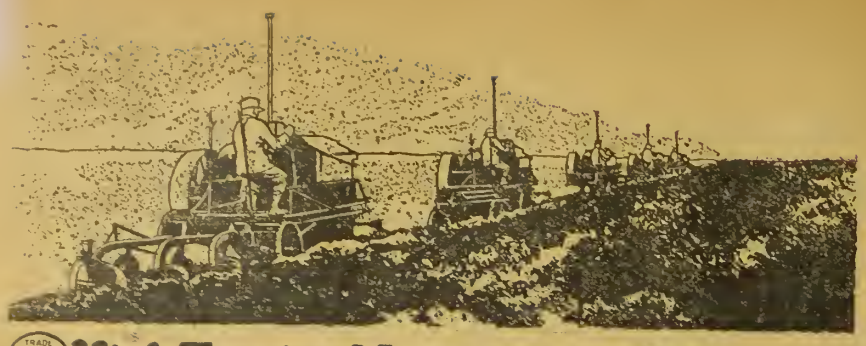

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Written for California Cultivator By F. H. Mason

THOUGH the earliest agricultural researches were directed mainly toward the improvement of soils, these soon gave way to the more fascinating work of improvement of plants by selection and cross pollenization, and their protection from enemy pests by sprays, powders, and gases, and the introduction of enemy parasites. How high a degree of perfection many plants have reached under such treatment is perhaps most noticeable in some of our garden plants, many of which have been so improved that at first glance it is difficult to see a resemblance to the parent plant. Equally successful, if less noticeable, work has been done to vegetable, field and orchard plants, with the view to improving the quality and increasing the quality of the crops.

Now the tendency seems to be to get back once again to the root of things and give more attention to the improvement of the soil. Probably the greatest work in this direction is open to the bacteriologist. It has long been known that a group of minute organisms in the soil have the power of fixing atmospheric nitrogen, another group of converting insoluble sulphur into soluble sulphates, another of changing vegetable matter into humus, and so on with other substances. Few or no attempts have been made to improve these organisms with a view to obtaining greater effort from them. Brewers and vintners have so improved fermentation yeast that the result now obtained from it is hardly comparable with that obtained from the earlier material, and there seems to be no reason why soil bacteria should not be improved in the same way. Some years ago, the Azotobacter, the principal nitrogen fixing bacterium, ran so rampant and produced such quantities of sodium nitrate in orchards in the alkaline soil of a part of Colorado that they did considerable damage. In fact, a number of 30 year old trees were killed by the excess of nitrate formed, and an elaborte research at the Colorado state experimental station proved it to be due to the work of the Azotobacter. The alkali, moisture, and decaying vegetable matter in the soil were found to be just suited to the propagation of this microorganism. There is reason to believe, then, that, by careful study of this problem, the nation, so far as agricultural pursuits are concerned, could be made independent of the Chili saltpeter beds and of artificial nitrogen fixation.

Much of the improvement to the physical properties of soils has been of a haphazard nature. The farmer has been in the habit of digging in something here because the soil is too soggy, and something else there because it is too light and will not retain moisture, and he does it because his father and grandfather did it before him. That he has met with some measure of success there can be no gainsaying, but how much greater that success would have been had he worked along more scientific lines.

We must look at soil as an aggregation of mineral particles of varying size, shape, and composition, that forms a medium by which food in solution is conveyed to the roots of plants. The laws that govern the diffusion of salts in solution as the latter pass between the interstices of this mineral aggregation are little understood. The conditions are such that a number of well defined laws are pulling against each other, so to speak, and forming new laws, laws that must be studied to get the best results. The size and nature of the mineral particles undoubtedly influence not only the rates of diffusion of the minerals in solution passing through the interstices between them but also the amount of water a soil is capable of retaining. Then, too, in a loosely arranged aggregation of mineral particles there is a greater opportunity for aeration and a less resistance to the spread of plant root system than in a compactly arranged one. Thus, it will be seen there is much opportunity for careful investigation. There is a great need, too, for a nomenclature of the various soil conditions that can be readily understood. Our present terms, such as they are, have too broad an interpretation. It is impossible to define a soil condition by their use, therefore much misunderstanding arises.

It is, however, on the chemical nature of soils that agriculturalists seem to have been bending their energies in recent days. Some truly significant facts have been brought to light that give every prospect of a wonderfully beneficient influence on crop yield. Most important among these is the influence of sulphur on soils.

Until recently sulphur was supposed to be present in only very minute quantities in plant life. Compared to nitrogen, phosphoric acid, and potash the quantity of sulphur was considered negligible. This supposition was due, however, to faulty methods of analyses. The agricultural chemist had been in the habit of determining what he called the "inorganic constituents of plants" by incinerating the plant and from the analysis of the ash calculating the amount of the so-called "inorganic constituents." From the light of recent researches it is now known that sometimes as much as 90 per cent of the sulphur content of the plant was lost during the incineration, so the result obtained gave no idea of the sulphur content. By improved methods of analysis it has been discovered that many plants contain more sulphur than phosphoric acid, nitrogen, or potash. Thus, for instance, at the South Oregon experimental station a ton of dried alfalfa was found to contain seven pounds of sulphur and five pounds of phosphoric acid, while a like amount of rape contained the phenomenal amount of 20 pounds of sulphur. The sulphur seems to exist mainly in combination with carbon, and for this reason until recently escaped the notice of the agricultural chemist. Since it has been established beyond all doubt that next to carbon, oxygen, and hydrogen sulphur is one of the main, if not the main, constituent of plant life, the addition of sulphur in various forms to soils is being investigated at a number of agricultural experimental stations in America and Europe.

The investigations have produced some truly wonderful results. The addition of from three to four hundred pounds of elemental sulphur per acre prior to sowing has caused some remarkable crop increases. Practically every crop experimented with has shown an increase under the influence of sulphur: some small, others phenomenal. The increase too varied considerably at the different stations. This, of course, was to be expected, as

the nature of the soil varied. The following are a few of the results obtained on a field scale near Salt Lake. Sugar beets gave the poorest increase, that of 3.7 per cent, and turnips came next with 10.4 per cent. Barley showed an increase of 52.3 per cent, oats 57.3 per cent, wheat 127.8 per cent, maize 182.6 per cent, alfalfa 36.8 per cent, Canadian field peas 383.3, potatoes 63 per cent, and Hubbard squash 187.9 per cent. In making these tests, a plot of land was selected that has as nearly as it was possible to find the same character of soil throughout. Half of this was sown with four hundred pounds of sulphur per acre, and the whole was then plowed. The various crops were sown in the sulphurized and unsulphurized soil at the same time, each at its proper season, and were treated as nearly as possible alike as regards cultivation and irrigation. The harvesting on the sulphurized and unsulphurized portions was done on the same day, and the crops were weighed, giving results as stated. The soil on which the experiment was conducted was alkaline.

Work done by Dr. C. B. Lipman, of the University of California, and Dr. F. C. Reimer, of the United States South Oregon station, confirms the experiments made at Salt Lake and proves beyond all doubt that the addition of sulphur to soils increases the yield of all crops, and in many instances phenomenally. The most remarkable result recorded is that by Dr. Reimer, who found that by harrowing in 300 pounds of elemental sulphur per acre the yield of alfalfa was increased over 500 per cent. It is a noticeable fact that the addition of sulphur to soils seems to increase the yield of the plants of the pulse family more than any other, and suggests that it may increase their well known nitrogen fixing properties. The best results have been obtained in moist soils well charged with humus. In fact, to get the full benefit from the addition of sulphur, moisture and humus seem essential.

Up to now the experiments with sulphur have been conducted mainly on alkaline soils. To what extent sulphur will improve neutral and acid soils is problematical. It may—probably will—be necessary to add lime as such as basic phosphate or in other form, with the sulphur, but, considering the established fact that sulphur is an essential of plant life, there is little doubt but that its application under suitable conditions will materially increase crop yields on all soils.

Another important point is the property sulphur has been found to possess of releasing and rendering available for plant assimilation potash that is already in the soil, but in a form not, or only slowly, available to plant life. There is a considerable amount of such potash locked up in the soils of a large part of the continent of North America, and if this potash can be released and rendered available to plant life it will go far toward making us independent of the German supply.

EARLY RAINS AND PEAR BLIGHT

By G. H. Hecke, State Commissioner of Horticulture

The unprecedented early rains, if followed by warm weather, will start new growth of all deciduous fruit trees. In the case of pears there is a serious danger with respect to the development of pear blight, which must not be overlooked. Already pears have been seen that have begun to throw out new leaves at the terminals. Not only will new foliage be developed but blooming may also take place. While it is probable that insect visitants of the blossoms will be less in the fall than in the spring there is nevertheless considerable danger of pear blight development and spread as the trees take a new lease on life. Conditions will thus be ideal for the development of the pear blight organism from infections already in the trees.

There is a tendency on the part of some pear growers to neglect the removal of blighted branches late in the season, as ordinarily the disease develops little after the spring months, and hold-over cases may be removed in the winter when the press of work is not so acute as during the summer season. Every pear grower should be on his guard and in the event that blight should become active at this time of abnormal tree development no pains should be spared in an effort to control it. As the most important thing in connection with pear blight control work in the orchard is the disinfection of wounds and tools used in cutting the blight from the trees, the information that has just come to us from the noted pear expert of Oregon, F. C. Reimer, should be given publicity at this time. Reimer experimented with a number of different disinfectants, using corrosive sublimate, creosole, Bordeaux paste, lime sulphur, black leaf 40 and cyanide of mercury. Corrosive sublimate, which is commonly used, was not found to be thoroughly effective, and the only material which could be depended upon absolutely was cyanide of mercury. It was used at the strength of one gram of pure cyanide of mercury to 500 grams of water. We quote the following from an article just received from Reimer: "It is quite remarkable that with all the other treatments every wound developed blight, while where the cyanide of mercury was used not the slightest indication of disease could be found." There has been a feeling in the minds of a number of people who have been studying pear blight that the commonly used corrosive sublimate was not giving results. That there were good grounds for this feeling is indicated by Reimer's experiment.

NURSERYMEN'S ANNUAL MEETING

"The Transactions and Proceedings of the California Association of Nurserymen's Seventh Annual Meeting, San Jose, October, 1917," is the title of the annual report of the association now mailed to members. Secretary Kruckeberg announces that the sending out of these proceedings was delayed until this time in order to create interest in the coming convention which will be held at Riverside at the time of the State Fruit Growers and other conventions, November 11-16. The report contains the president's and many other addresses made at the convention in full, and many other events held at that convention. Nurserymen are anticipating a still greater event at the Riverside meeting.

YUCAIPA'S APPLE SHOW A RED CROSS BENEFIT

Secretary Redding writes the Cultivator: "This year we are holding the Southern California Apple Show as a Red Cross benefit, and judging by the entries to date it will far surpass any apple show ever held in the south."

The apples of Yucaipa Valley have made an enviable name for themselves, as have the owners of Yucaipa Valley orchards. Their Southern California Apple Show is worth going miles to see. The dates are: November 6, 7 8, 9.

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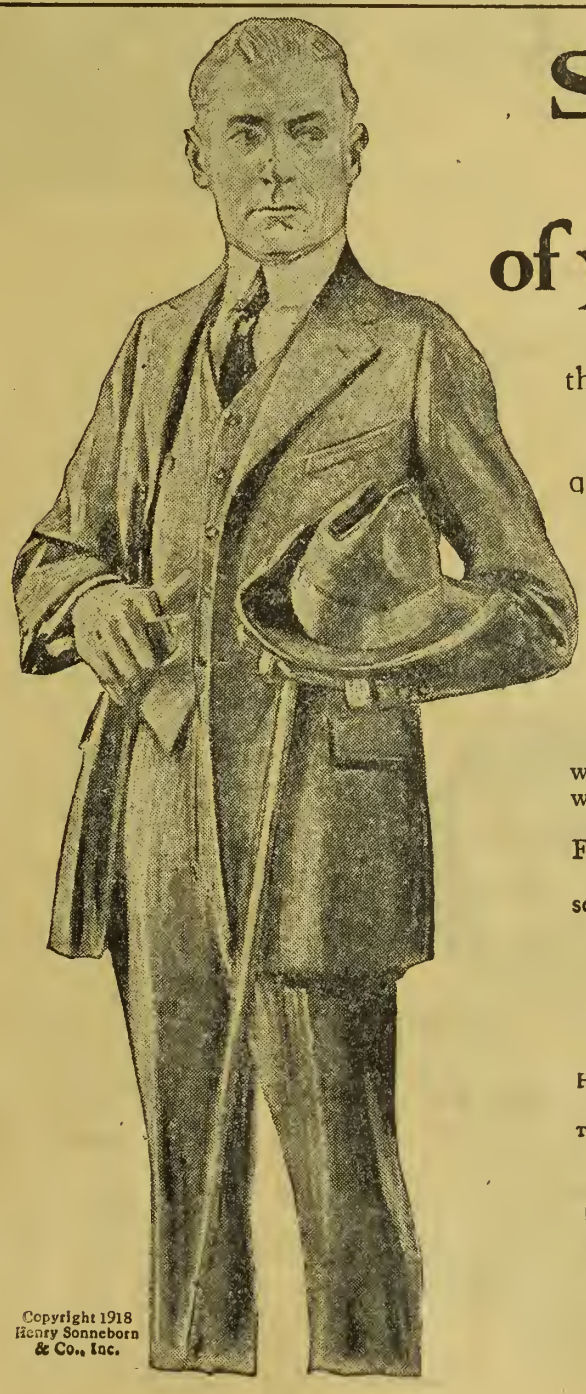

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Good resolutions for every man to make in these war times are:

"I will buy only the clothes that I *need*.

"I will pay the price that brings genuine quality—*and not one cent more*."

Every dollar you spend should count. Count for you and country.

You will be stylish and thrifty *both* if you buy Styleplus Clothes.

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You buy with both eyes open at the Styleplus Store!

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America's only known-priced clothes

Full Power From Every Drop of Kerosene—No Waste

WATERLOO BOY

Original Kerosene Tractor

Waterloo Boy tractors are unfailingly successful in operating on inexpensive kerosene. The short superheated Waterloo Boy manifold distills kerosene into fuel of great volatile force—carries every particle of gas in the cylinders without loss of explosive power through condensation.

That's why the *Waterloo Boy* three-plow, one-man tractor plows 8 to 12 acres per day on less than 2 gallons fuel per acre. Every drop of fuel is turned into practical, tangible power for use in field work or on belt jobs.

Mechanical Excellence Backs Up Power Ability

We purposely built this tractor strong for the strain you are likely to put upon it, and stand behind it with a positive quality guarantee.

Dust proof gear construction, perfect automatic lubrication, complete and easy accessibility of gears and bearings, easy control, make it trouble proof in inexperienced hands.

There are other reasons why thousands of farmers are satisfied with their *Waterloo Boys.* Many of these users' testimony is presented in our catalog—accompanied by actual photographs of the *Waterloo Boy* in action. Write for it.

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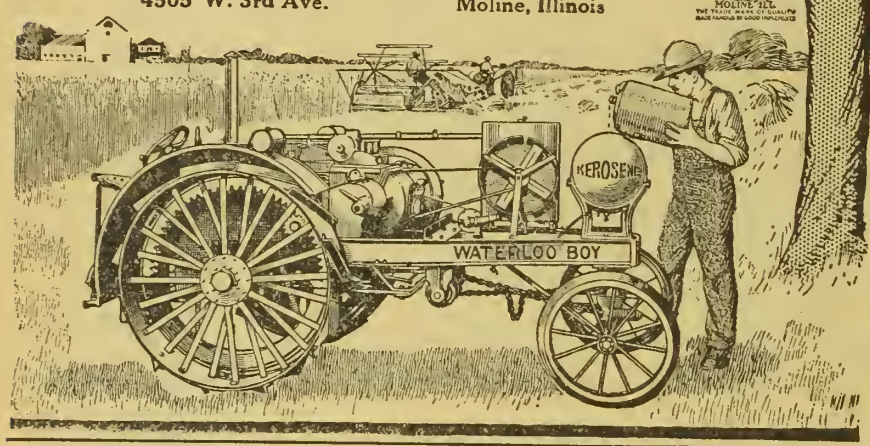

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First thing—get a quick start. Half the garden is in the start. Take advantage of the early rains. Get your seed in now before the frost arrives. Then—around Christmas time—you'll have a good, substantial garden to show for your time and trouble.

Now—as to seed. Nothing is more important. You know that! To grow things with size and flavor—you must sow fresh, recleaned seed of *proven* vitality and strong germination. Half-hearted, poor-pedigreed seed won't do!

That's why you're safe when you bank on Morse's Seeds. Thoroughly ground-tested, true-to-type, dependable! For instance—there's the

Thos. Laxton Pea

—the best and earliest non-dwarf pea. Grows a medium vine—a steady, easy bearer—and the pea is uncommonly delicious. Try it!

Write today for Garden Guide and Price List—right now!

Here are some vegetable suggestions for Fall Gardens:

Peas, Onions, Spinach, Carrots, Radishes, Lettuce

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C. C. MORSE & CO.
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LARGEST STOCK IN AMERICA
Decomposed.

Sheep - MANURES - Steer

Concentrated
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Because of the shortage of manures in this territory it will be well to consider NOW your fertilizer requirements for the next twelve months.

More carefully handled and prepared than other manures. From highest nitrogenous feed.

Steer Analysis		Sheep Analysis	
Available Nitrogen	1.53 to 1.75 per cent	Available Nitrogen	1.75 to 2.00 per cent
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" Water Soluble Potash	2.43 to 2.92 per cent	" Water Soluble Potash	3.62 to 3.88 per cent
" Humus	5.07 to 5.70 per cent	" Humus	7.42 to 8.12 per cent

Highest in organic, and free from foreign matter. Shipped commercially dry basis.—Saves four-fifths labor in application. Write for price and particulars today to insure prompt delivery.

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423 Citizens National Bank Building, Los Angeles, California. Phone 65643.

Farmer's Field Day

Written for California Cultivator By M. E. Bemis

ALTHOUGH Maricopa County in Arizona is greater in area than the state of Massachusetts farmers from all parts of it came to the Field Day, Farmer's Meeting held October 5 at the experiment station farm near Mesa. Several times before I have told Cultivator readers of the progress that is being made on this farm. The fame of the "Salt River Valley Farm," as this branch of the state experiment station is called, has been gradually spreading, and therefore it was not surprising that the number of farmers and farmer's wives that came at the invitation of the farm bureau of the county was far in excess of the number assembled at any previous meeting of this kind.

The tractor demonstration was the magnet that drew many. Eight different makes of tractors were tried out, mostly with plows, though harrows were used enough to prove the pulling power of the various types of tractors. This was the best tractor show ever held in the state. The crowds that followed these tractors was ample evidence of the interest that this new farm power has aroused among the farmers of the Salt River Valley.

Plowing stunts in both stubble and alfalfa were pulled off, and the way these sturdy little iron horses pulled away, indifferent as to whether the ground was packed or in alfalfa, was a revelation to many. The tractors were turned loose, so to speak, in a field of alfalfa that would have cut at the time, one-half to three-fourths of a ton of hay. Frequent remarks, such as: "That's a shame to plow under that alfalfa" or "That is like turning under money" were heard. The tractors didn't mind the heavy roots a bit, and the crowd seemed to be pretty well satisfied to be out of the dust that enveloped tractors and observers in the stubble field demonstration.

Demonstrations of this kind, while they may not settle the question of the superiority of any tractor, or type of tractor, give opportunity for farmers to ask questions, compare notes, and discuss the merits or demerits of each one, and while a tractor demonstration seems to an onlooker a bit chaotic, as the dust and the noise subsides so also are the minds of these who have come to be shown, clarified and opinions formed.

Not all, it is true, agree on the same machine, but not all have the same conditions, and therefore are best suited with machines that would not suit some one else at all.

The Growing Crops

Not the least interesting are the crops now growing on the farm. Some time ago I told Cultivator readers about the crops on this farm in the spring. I hope to have data on the yields of grain a little later. I understand that the wheat on this farm averaged 45 bushels to the acre. The cotton is developing nicely and some valuable data should be obtained when picking is over, which will be a valuable guide in the matter of distance apart to plant, time of planting, cultivation, etc.

Considerable work is being done with summer legumes, principally cow peas and Soy beans. Practically all known varieties of Soy beans have been tried, some of these show thrifty vines, but the poor stand of so many varieties is not encouraging. The general experience of practically all who have tried Soy beans is that they are difficult to germinate. I understand that some few farmers in the valley have inoculated with a special bacteria and when soil conditions have been just right, very favorable results have been obtained.

Until more data regarding culture methods are had, farmers will do well to go slow in planting Soy beans. Velvet beans are in the same class, and plantings proved so poor that they were plowed up.

Cow peas are decidedly more promising. Some 15 varieties are being grown, a number of these are showing up nicely at the present time and would seem to be a desirable crop where a summer legume is needed. There are some places a legume is highly desirable. It has been found that orchards where a summer crop is grown do better than with clean cultivation. The soil is a number of degrees cooler, and the humus is increased instead of being burned out.

Some orange growers have for a number of years used cow peas with good results. The effort of the experiment station is to find a summer legume that can follow grain and make a profitable forage crop or if turned under will add to the fertility and regular rotation. Where alfalfa is grown as the basis crop, there is of course little need for a summer crop. With the increased acreage of cotton, a shorter rotation in which alfalfa does not appear makes the value of a summer legume greater.

A number of varieties of cow peas are showing up nicely. The Groit seems to a casual observer to have the lead. An interesting experiment is being carried on with several varieties, the seed of which was inoculated with a special culture. These are grown alongside the same varieties, planted at the same time with the same seed, but without the inocula-

Interest in Farm Power

The intense interest in farm implements and best methods of using them was shown at the Farmer's Field Day.

tion. Superintendent Woods says, that "while results are only indicative now, it would seem that the inoculated seed is producing a heavier growth."

Tepary beans are also being grown, but it is doubtful if these will ever be considered a satisfactory crop for irrigated sections. As a dry farm crop, probably, they have some value.

Experimental plots of different vavieties of corn are also being grown, some eight or ten kinds, under similar conditions. As usual, the Mexican June is very evidently in the lead. There are several plantings of this variety, that is with seed from different sources. One is the Hammonds select which came direct from Mexico and is very promising. Superintendent Woods made some field selections last year, and has them planted in ear to the row tests. It is very interesting to note that these plantings from two ears to the stalk are producing almost invariably two ear stalks, and ears from one ear to the stalk are producing one ear stalks. This shows the value of field selections. Special attention also was given to selecting ears as low on the stalks as possible and the high ear is one—and about the only objection to the Mexican June corn. It is pleasing to note that the majority of ears from these specially selected plants are growing lower than the average ears found in average fields.

The importance of corn for silage makes it imperative that we have a variety that is adapted to this climate and that will produce well.

With a little care in selection, and possibly some corn breeding work, we will soon have the Mexican June corn where it will equal in production the corn of the Eastern states.

The farm work of the station is all that could be expected, and is of great value to those farming under similar conditions and this includes 90 per cent of all agricultural land in Arizona, and to a large extent the Imperial Valley of California.

It is to be hoped that the animal industry feature will be developed within the next few years to the same extent that the crop production has been developed. Dairying is one of the great industries, but there are some factors such as feeding problems and advantages of soiling that if more data were obtained it would be of material help to dairymen. We have very little data on steer feeding or hog raising that is particularly applicable to Southern Arizona conditions. We need carefully conducted feeding tests that will utilize the splendid crops that Superintendent Woods is growing. Last, but not least, we need some poultry feeding experiments. It is to be hoped that the coming legislature will see the need and make the necessary appropriation for such work.

FARM "ADVISERS"

WHEN the farm bureau movement first started the Cultivator took occasion to criticize the use the word "adviser" in referring to the executive officer of the organization. The taking of advice should be easy to all of us and is to many; to others it proves most offensive. As much as that fact may be decried, as much as we may say that no man who is big enough will refuse to take good advice with appreciation for the fact that it is given, it still remains true that this is generally the case.

Recognizing this weakness of human nature, most of the Eastern states have dropped the use of "adviser" and are using instead "agent", "county farm agent" or "county agricultural agent", maintaining that this official is in fact more of an agent to bring together the inquirer and the expert qualified to answer him.

Usually of course, the county agent is truly qualified to answer the questions direct and becomes in truth a real adviser, but if there is objection to the term, some other word which will not be objectionable to the farmer may well be chosen.

The Cultivator is a thorough believer in the farm bureau movement, is a thorough believer in any movement which tends to bring better understanding of the wonderfully complex questions which confront every farmer. Few callings have so many hard problems to solve, and colleges of agriculture and state experiment stations which have for their object the advancing of agricultural interests. County commissions or county farm advisers and if we may, the farm paper, should all be encouraged to extend help to every farmer, for every one needs all the competent help he can get.

Along this line came two letters in the same mail. The first we quote appreciates the opportunity offered by the farm adviser and the farm bureaus and asks: "Would you please let me know the name of and where I can get in touch with the Orange County farm adviser; and what charge does he make, if any, for his services?"

As to charge there is none, other than every farmer should become a member of the farm bureau which costs $1.00 per year.

The other letter is from a county 500 miles from Orange and takes an entirely different view of the value of the advice. We doubt not there is some misunderstanding here due to the lack of appreciation of human nature rather than to lack of appreciation of any word which will help in the production of greater and better crops. The correspondent writes:

"I cannot help but consider the whole idea of the farm adviser an insult to the energy and business sense of American agriculture, and the state market director and his office would be simply rubbing it in, if it amounted to anything more than a cheap joke—on everybody but the salary payers.

I produced about 45 tons of peaches from 396 trees—14 years old—no fertilizer, about a third of them not even plowed last year; blackberries yielded $1820 per acre net; barley sowed too late, 22 sacks per acre; a tenth of an acre of potatoes (dry land) look in the cellar like plenty for four persons until next May or June; Blackeye beans on barley ground are yielding 13 100-pound sacks to acre—but about one-fourth subirrigated and have made too much vine and not half a crop of beans; four acres alfalfa, can't tell exactly, some fed green, about 32 tons; a new variety of sorghum, canes sweet—about like Indian corn—a little over four tons of shelled corn to the acre; plenty of vegetables although we only came to this state in January.

Many small farmers, doubtless, have done much better but is there any reason why an impudent incompetent should come around here telling me what my land will raise and what I should plant, and when and how to cultivate and water and my good wife, my helper, when and how to milk our cow?

Some of my own family and many friends are serving Uncle Sam. I want to raise every pound of food I can as I seem to be too old and crippled to do anything else. The Cultivator and others of its kind from other parts of this country furnish all the advice I can digest and I don't like to be insulted in doing my work."

Regarding the point that the adviser enters on the farm, forcing his advice on the unwilling, we may say that this is contrary to the usual custom. One of the principles of the farm bureau is that its adviser or agent shall not give of his information until it is asked.

Are Farms Going to Pay This Year?

HELP IS GETTING SCARCE—THERE ARE NOT ENOUGH MEN OR WOMEN TO GO AROUND AND HUNDREDS OF ACRES WILL NOT BE WORKED THIS YEAR.
THE CLEVELAND TRACTOR WILL HELP OUT, DOING THE WORK OF THREE 3-HORSE TEAMS, WITH ONE MAN TAKING THE PLACE OF FOUR.
BUT THE BUILDING OF TRACTORS HAS BEEN REDUCED 25 PER CENT BY THE WAR INDUSTRIES BOARD.

Take Warning

Read the message from the Government in the opposite column. Read every word. Let it sink in.
It means just this—that there will be a shortage of tractors for the next twelve months at a time when the demand will exceed all previous records; when labor and horses are almost impossible to secure.
It means that the man who "puts off" will not secure a tractor.
It means that the man who will not heed the storm signals will be shipwrecked.
It means the line is to be drawn between those who think and those who don't.
Tomorrow never comes nor can you turn back to yesterday; you have but today to decide. This is a personal message for your personal good. It is to men, real men who can grasp the truth; men who, when they hear the truth, ACT.

F. H. STOW.

Here is What the Message Says Concerning Tractors:

After a very full and lengthy discussion of the needs of the Government in steel and pig iron, also the necessity of maintaining an adequate supply of farm operating equipment, including tractors, for food production, E. B. Parker, Priorities Commissioner, says that the very least they could ask this industry to contribute to help meet the government war program was a reduction of 25 per cent in the amount of pig iron and steel to be received from the suppliers for the coming year, from October 1, 1918, as compared with the quantities received during the previous year, October 1, 1917, to October 1, 1918. No amount of argument could change this decision and it therefore becomes the obligation of each manufacturer to adjust himself in the way that will serve his trade and the farmer best out of the materials allotted him as above.

FARM IMPLEMENTS COMMITTEE.
C. S. Brantingham, Chairman.

Are you going to sit by and see your land lying idle growing weeds when it could have been growing golden dollars? Call us on the telephone or write us right now and let us explain what

The Cleveland Tractor

WILL MEAN ON YOUR FARM—HOW IT WILL INCREASE YOUR INCOME MORE THAN DOUBLE THAT OF LAST YEAR.
DON'T WAIT—WE ARE ONLY GOING TO GET 75 PER CENT OF THE NUMBER BUILT LAST YEAR, WHICH AMOUNT WAS NOT ENOUGH TO GO AROUND.
EVERY ONE WHO PUTS OFF BUYING A TRACTOR IS GOING TO FEEL THE LOSS.

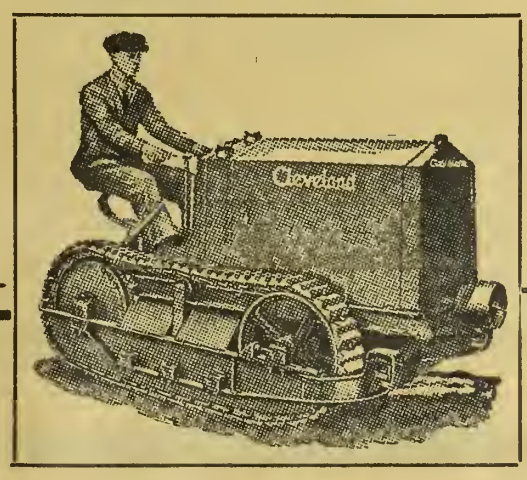
Protect Yourself—Order Now

F. H. Stow Tractor Company

Distributors

2072-76 Center St. **Berkeley, California**

Don't forget the Gas Tractor short course at the Davis Farm.
It will pay all to attend. For owners and operators—three days, November 20-21-22. For beginners—November 11-19.



War Chest Campaign

MANY fathers and mothers in the country, knowing how strange their boy has felt in making his first visit to a large city, wonder what he does when he reaches France, where he cannot even speak the language. The organizations included in the United War Work Campaign have taken care of this feature along with many other very necessary activities in this country and overseas. It is to be expected that a boy would feel strange entering an entirely new life, whether it be in an American Army camp in this country or in France, but particularly abroad. The "huts" provided in these camps are the soldier's church and college, his gymnasium and his club. Classes in French, mathematics, history and business practice are held regularly, so that hundreds of thousands of boys who are ambitious and wish to come out of the war better than when they went into it, need not get behind in their studies and, indeed, may even acquire one or two additional languages.

The soldiers of America will not have to face the hardships which confronted the soldiers in the Civil War, North and South, and we ought to be mighty thankful for this. It means better men and cleaner lives. It ought to give the mothers a fine sense of security to know that their boys are not being wasted. There is a great satisfaction in this. We had some indication of the opposite kind of life in the Spansh-American War, and even during the days on the Mexican border, when General Pershing took his men into the Southern republic or distributed them along the frontier. We don't want any more of it. The way to prevent it, the way to bring these soldiers home right, is to provide the things they need for comfort, physical and spiritual, and for proper entertainment. These things make up the strength of the army; they supply the fighting temper, or rather they create what we know as the morale of the army. Without this morale, with the men dissatisfied, discontented, trouble is sure to ensue. No commander cares to be confronted with such a condition. The American public would not have understood this two years ago, as it understands it now. The American public has learned the lesson of giving, because through the tragic channels of the casualty list it has learned to understand its grave responsibility to the world at large. We have been self-centered. We have been content for generations to make money to grow more corn, to feed more cattle, to buy more land to grow more corn. We have seldom thought about the other fellow. But the war has changed this and now we know that America must win the Great War. Men win battles, but wealth wins wars. Therefore, the way to win battles is to make the men fit, and it is your duty and mine, and the duty of all of us to keep them fit.

More than 15,000 persons are engaged in America in agricultural pursuits of one kind or another. We have about six and one-half million farms. This means that a very large part of our armies is made up of farm boys and boys from very small towns. Let us take care of them. When the committee comes around to ask for our contribution for the United War Work Campaign, let us not try to get out of a very manifest duty by saying that we have just subscribed to the Liberty Loan. America has been in the war only a year and a half. We have not reached the outer lines of self-denial. As long as we continue to eat three good meals a day and wear reasonably good clothes; as long as we continue to have a safe shelter; as long as we are allowed to go about our ordinary daily round of duties without interference and with a large degree of certainty that we are going to sleep in security; just as long as these things continue we shall not know self-denial or sacrifice. Put these in contrast with the boy who gives his life, and you will not find much difficulty in contributing liberally to the United War Work Campaign.

LESS WORK AND MORE RESULTS

There is going to be no particular shutting off of the markets for fruits of all kinds on account of the war, and as for general crops, everyone knows what the nation and the world are demanding in the way of increased yields. It follows that every effort should be bent toward making each orchard and each field produce its maximum. Ordinary crops are not enough. Labor and other expense that must be put on any crop, good or poor, is worth too much money to permit it to bring back only medium results.

One way in which California farmers and fruit growers can increase their returns without increasing their work very much is to see that irrigation water does its duty more fully. One of the common ways in which it fails is slowness of penetration, owing to a clogged condition of the soil right below the plow-depth, particularly along the irrigation furrows or under the basins. The furrows or basins may hold water for days, while the ground 10 or 15 feet away may be little dampened.

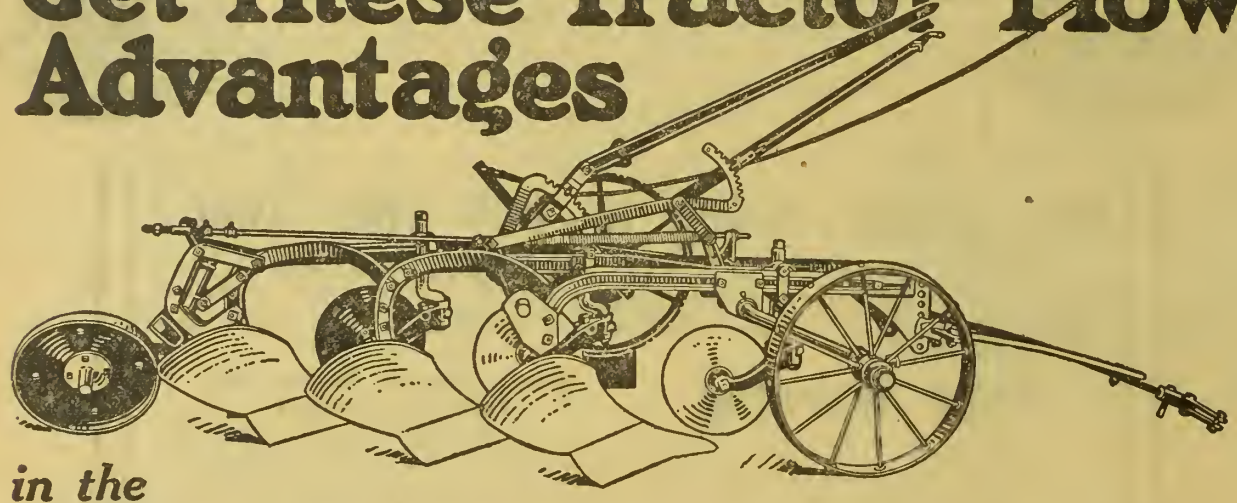
Deep penetration of water, uniformly and evenly throughout all of the soil, is a vital thing, and on it depends the sure development of big crops to a large extent. The only way to secure it is to open up the lower soil with powder. Light charges only are required, for the top four feet is enough to have loosened. The blasting should be followed by the planting of a heavy-rooted cover crop of some annual plant, in order that the roots will go down into the loosened soil and be a source of organic matter when they die. They help greatly in this way to maintain the loosened condition.

The soil that is not loosened, under the reach of surface cultivation, becomes so compact and tight that it acts as a filter, permitting the water to pass through slowly only, and hindering very seriously the movement of water upward later on. In fact, a clogged soil may hold only half as much water between irrigation periods, in capillary form, and that it does hold is prevented from moving upward and in other directions as freely as it otherwise would. To wet such a soil to the extent that surface indications show is enough takes much more water than it should, while a good deal of this water is wasted by sinking too deep through the softer spots and by escaping through drainage channels.

The ground, however, must be very dry when it is blasted, otherwise pot holes will be formed, and a good deal of the very compacting that it is desired to break up will be caused. The test is to take a sample from a depth of a couple of feet. If it crumbles and powders in the hand under pressure, and runs through the fingers when the hand is opened, it is dry enough to blast. If it compacts and molds to the shape of the palm under the pressure, it still is too plastic, and blasting should be delayed for better conditions.

So far as the effect on growing trees

Get These Tractor Plow Advantages



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JOHN DEERE TRACTOR PLOW

Specially Adapted for Plowing in California

There is special satisfaction for you in using the John Deere No. 5 or No. 6 Tractor Plow because these plows are built to meet the particular plowing requirements of California.

They are unusually steady running. Controlled by the wheels at all times because the axles are rigidly fastened to the beams. Land wheel is set back, balancing the weight of the plow over all of the wheels and insuring even depth of plowing in uneven ground. The plows get down to position quickly and stay in the ground while plowing.

Exceptionally strong in every part. Beams warranted not to bend or break. Beam braces have extra long lap. Large bolts and lock washers hold all parts rigidly to place.

Simplest and most dependable power lift ever designed. No chains or sprockets. Powerful clutch engages positively, raising bottoms high and level.

Location of land wheel and front furrow wheel permits plowing close to trees or vines in throwing either to or from the row. Both levers out of the way of limbs while plow is at work.

Unusual clearance for unhindered work in trashy land or in deep plowing.

Quick Detachable Shares save time and labor without sacrificing strength or close fit. Loosen one nut to take a share off. Tighten the same nut and share is on tight.

Genuine John Deere bottoms wear, scour and pulverize to best advantage.

Hitch adjustable for any standard tractor. Two, three and four-bottoms sizes, 10, 12 or 14 inch cut per bottom.

You will find these plows especially dependable for better and longer service. Investigate them at your first opportunity. Your John Deere dealer will show them to you.

Send for Free Books Write today for our free booklet describing fully the John Deere Light Tractor Plows. It has a message on tractor plow value that you will find profitable to you. Ask also for our big free book *"Better Farm Implements and How to Use Them."* Its 156 pages describe a full line of labor saving implements—(tells how to adjust and operate many of them). It is full of practical information that will help you. Put it in your library. Use it as a reference book. It will be worth dollars to you.

To get these books, mention the implements in which you are interested and ask for package PT2 2.

John Deere Plow Company
San Francisco, Cal.

and crops is concerned, there is no reason for waiting when the soil is right. It may be that the blasting causes a little upsettage of feeding, for a few days, but it is slight. Small charges properly loaded may be used about any tree at any time without any noticeable harmful effect, and all field crops may have the ground under the plant blasted without trouble resulting. The important thing is to get the subsoiling done, so that the all-important water will reach every inch of the lower soil.

STEEL REDUCTION TO TRACTOR MANUFACTURERS

A war measure of very serious proportions was recently taken by the government when an order was issued that tractor manufacturers were to be cut down 25 per cent in their allotment of steel. Heretofore they had been granted special privileges in the matter of their material, as the government realized and does still realize that the tractor is an essential on the farm.

It is, of course, with considerable regret that the tractor manufacturers have to curtail their output, but not one of them would deny that the first thought for this government and for the people is the winning of the war and if it becomes necessary for them to make fewer tractors so that more steel can be put into Hun chasers, then there will be fewer tractors for the farmer to purchase and he will have to be satisfied.

But it is possible at this time to fortify one's self against any shortage by giving orders for tractors at an early date. When one has determined that he must have a tractor and has given the matter of purchase careful consideration and has determined upon the machine that he will buy, it is his privilege to place an order for that tractor, and he will thus be placing himself in line for the machine when one is available.

The tractor situation is very interesting at this time. For the past year manufacturers have been sold several months ahead and the question has been with the buyer "Can I get my tractor soon?" rather than with the manufacturer, "Can we sell our output?" With the reduction in the allotment of steel to the manufacturers the situation will become more acute than ever and it will be a question with the buyer "Will you please get me a tractor?"

It is advisable, therefore, to place your order early if you expect to be supplied with this much needed machine, for manufacturers and representatives must supply their early orders first and it is up to the buyer to get his order well to the front of the list. A wait of from three to six months may mean much loss. That can be obviated by being sure that the tractor will be on hand at the wanted time.

DON'T SELL WHEAT BELOW GOVERNMENT PRICE

Federal Food Administrator Herbert C. Hoover, through the California food administration, today cautioned farmers against selling their wheat at a price lower than that fixed by the government.

The slow movement of the grain and the temporary slack in the market, which has occasioned alarm on the part of some growers, was explained by Hoover in the following dispatch:

"The enlarged demands by General Pershing for military supplies resulting from his progress on the western front has necessitated temporary diversion of grain ships for this service. This has temporarily curtailed wheat movement from the seaboard and has filled seaboard and terminal elevators, thus checking movement.

"It has been reported that some farmers have become panicky and are selling wheat at less than the government price. There is no occasion for this. The wheat will all be moved and the full price secured by all farmers, if they will have a little patience."

DRAFT THE SLACKER ACRES

The University of California is making a campaign for drafting every idle acre capable of growing wheat or other foods. This work is being supplemented by organizations in various parts of the state, at least we note the chamber of commerce of San Diego County is sending out blanks to property owners who have lands not now under culture, urging the owners to list their lands with the chamber. The blank gives opportunity for listing name of owner; location; general character of the soil; is it fenced; if leased, for cash or share of crop, etc.

Through the division of agronomy, college of agriculture, Berkeley, about 175,000 acres of land have been listed as available for lease or purchase. The applicants for these lands should have sufficient capital to purchase tools, stock and seed; experience in farming is necessary.

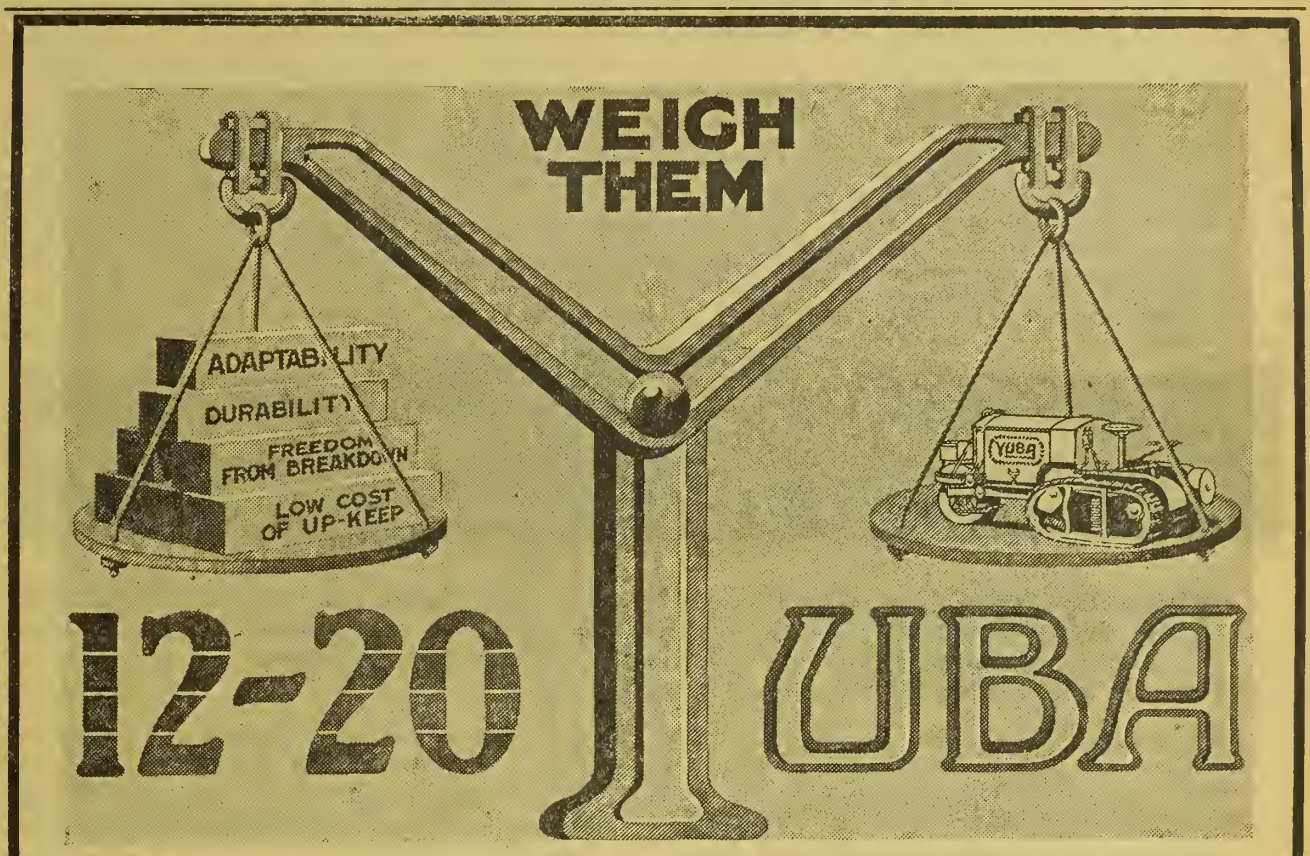
The tracts vary from five to 64,000 acres in extent, and include level, irrigated lands, suitable for alfalfa and similar crops, as well as rough, hilly ranges, suitable only for stock ranches. Most of the land is unimproved and adapted to dry farming of grain. A few ranches completely equipped with buildings, fences, stock, tools and with water for irrigation are listed.

FARMERS AUTHORIZED TO KILL WILD DUCKS

Wild ducks in the rice fields of Butte, Colusa, Glenn, Sutter, Yolo and Yuba Counties may be shot when necessary to protect crops, according to an official telegram from Washington to Carl Westerfield, executive officer of the fish and game commission of California. The ruling holds good until October 15. Only rice farmers, members of their immediate families and employes, however, may shoot the ducks, and they must shoot in open field.

Another restriction in the ruling keeps farmers from selling these ducks, and provides that they must either eat them or send them to charitable institutions or hospitals.

In the presence of a common enemy we sit at a common table with all people defenders.



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Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

No Bounty

Please inform me as to whether there is a bounty on coyotes in Los Angeles County.—Subscriber, Lancaster.

There is no bounty on coyote scalps in Los Angeles County.

Fertilizer Questions

Will you please tell me through the columns of your paper the best method of preserving chicken manure for use in an orange grove? I am sprinkling bone meal on dropping boards and cleaning daily. What form of container is best, and should droppings be kept dry? Does gypsum have a chemical or only a mechanical action in preserving the nitrogen contents of the manure? How is composting done?—Subscriber, Rialto.

There is no better way than to take the scrapings direct from the dropping board to the garden or orchard and work into the soil. If, however, one wishes to compost the mixing of this combination of droppings and bone meal with soil, leaves, garbage, weeds, or any vegetable refuse, thoroughly wetting, makes a magnificent potting soil or fertilizer for placing around plants. The compost must be kept moistened; also in case of very heavy rains leaching should be prevented. Where the droppings are kept in barrel or other container and are stored with sufficient bone meal there is no danger of moisture causing loss of ammonia. Gypsum is also a fine absorbent and it saves the ammonia or nitrogen. It also has a chemical action when applied in the soil and releases quantities of potash which may not be available without it. Composting may be done by simply piling layer of weeds and other refuse and then another layer of soil, chicken manure, or other substances, repeating with weeds, soil, and manure, and maintaining proper moisture conditions for some months.

Storing Root Crops

What is the best method of storing root crops, carrots, beets, etc., during the winter months in the absence of a cellar, cave, or "adobe"?—Subscriber, Hemet.

The method of storing root crops in California usually is to leave them in the ground and pull as needed. If already pulled up throw on the ground in the shade and that will probably answer. However, for those who wish to go to the trouble of storing the roots here is the method as followed "back East."

"Potatoes, cabbage and root crops can be stored cheaply and efficiently in outdoor pits or banks if no cellar is available. Select a well-drained spot for the pit; and a shady spot is preferable. Remove the surface soil to a depth of one foot from a circular area not more than seven feet in diameter. This will allow for a conical pile of vegetables four feet high containing about 15 bushels. If more are to be stored, make additional pits or extend the one into a long low bank.

Potatoes and cabbage may be placed in the pit in direct contact with the soil, but for other vegetables it is better to line the pit with three or four inches of straw. When the vegetables are placed, cover them at once with a layer of straw, leaves or cornstalks to a depth of six inches, which will be all the protection needed until cold weather. Then a layer of earth from six to ten inches deep should be placed over the whole pile, and the ridge rounded off to shed the rain. To provide ventilation, the inner straw layer is allowed to protrude a few inches at the peak of the ridge. This should be sheltered by an inverted trough."

Formula for Ant Poison

Would you please publish the formula for the poison used in citrus orchards for eradicating the small black ant?—Subscriber, Hynes.

Would refer subscriber to article by R. S. Woglum in issue of the California Cultivator of March 30, 1918. On page 394 he gives formula for the poison and drawings of tin cans and sacks attached to the trunks of orange trees. The formula recommended by Prof. Woglum is: Twelve pounds granulated sugar, seven pints water, one-quarter ounce tartaric acid (crystallized). Boil 30 minutes. Allow to cool. Add water equal to that evaporated. Three-quarters ounce sodium arsenite (chemically pure only), dissolved in one pint hot water. Cool. Add poison solution to syrup and stir well. Add to the poisoned syrup two pounds honey. Mix thoroughly.

Preserving Fence Posts

I have a number of eucalyptus posts I intend to set this winter. Do you know of any preservative treatment which will prevent them from rotting in the ground? — Subscriber, Olivewood.

There is nothing better than hot creosote. Eucalyptus posts after being thoroughly seasoned should be soaked in hot creosote or linseed oil. Otherwise their life in the ground is very short. Soak lower end up to six inches above surface of ground. Write United States Department of Agriculture, Washington, D. C., for Farmers Bulletin 387, "The Preservative Treatment of Farm Timbers."

Strawberry Plants Died

I set 100 strawberry plants this spring. They grew nicely for a time but began to die off one by one though I watered and gave good care. What do you think caused the trouble?—Subscriber, Upland.

Of course such limited information gives opportunity for only a guess. Their death may have been caused by strawberry flea-beetle, thrips or other insect. If subscriber will send leaves from plants still living it is possible they may show fungous trouble.

Iron for Fertility

A neighbor applies old scraps of iron, wires, horse shoes, etc. to his orange trees, saying the iron gives good color to the fruits. It seems to me he is ruining his orchard for the iron may take oxygen from the roots, destroying them. What do you think?—Subscriber, Upland.

There have been a number of experiments made under the eyes of trained observers as to the value of scraps of iron; but we believe there is no evidence of their being of benefit. We also believe there would be no harm whatever from their addition, for any soil which is sufficiently cultivated would have a full supply of oxygen. Experiments have also been made in the addition of iron in the form of sulphates. This likewise has shown no marked advantage and proves to be rather expensive.

Acorns for Turkeys

Are the common acorns good feed for turkeys? Can they be preserved and stored for winter use? How should they be fed, whole or ground? —Subscriber, Los Angeles.

As I have never fed acorns to turkeys nor talked with anyone who had, and am unable to find in Henry & Morrison's "Feeds and Feeding" or in any other book at my command any reference to the use of acorns as feed for any kind of poultry or stock, I cannot answer the question positively, but the fact that no such mention is made is reasonable ground for doubt. Henry & Morrison list acorns as concentrates along with beet pulp, cocoa

A Tractor Must Have Reserve Power Such As This Case 10-20

THOUSANDS of Case 10-20 Kerosene Tractors are in use all over the country — probably in your neighborhood. We are proud to state that one of their outstanding features is Reserve Power. Owners everywhere tell us that these tractors easily meet unusual conditions. They are ready for frequent and unexpected overloads.

The drawbar rating is 10 horsepower, which is equivalent to a 1650 pound pull while traveling 2¼ miles per hour. But this sturdy machine will exert a pull of 2600 pounds on the drawbar, when necessary.

This shows our conservative rating. The 10-20 is recommended for pulling three 14-inch plows, which it handles easily in sod or stubble. The Reserve Power is always at hand for more difficult jobs or for grades.

And the Reserve tends to prolong the life of the machine, for it is usually working at its normal capacity. Continuous, undue strain is thereby avoided.

This Case 10-20 will also handle other implements usually requiring 8 to 10 horses, such as two 7-foot binders, two 20-shoe grain drills, eight sections spike-tooth harrow, 8 to 10-foot double disc harrow and other implements of like requirements. For belt work, this tractor has proven equally efficient. It drives a Case 20-inch cylinder thresher with wind stacker, feeder and grain handler. Also silo fillers, hay presses, feed mills, etc.

For all 'round use this Case 10-20 demands your investigation. It has proved its worth. It is economical in operation, *burning kerosene successfully.* It is built of the finest materials. It is bound to give maximum value for your money.

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A complete description of the Case 10-20, with pictures and specifications, will be sent free upon request. Or visit a Case Dealer.

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shells and bread, which does not give us very much light. The fact that the nutritive ration of kernel and shell ground together is 1:19.5 and that of the kernel alone 1:13.1 does give us a little, and the fact that there are only 47.1 pounds of digestible nutrients in 100 pounds a little more. I have heard that acorns are good feed for pigs, but Henry & Morrison do not mention it. I should not like to experiment with feeding them to turkeys unless I had very explicit advice on the subject from some one who had given them a thorough tryout. If any Cultivator reader has tried acorns for turkeys we should be glad to hear from him.—J. A. K.

Scale on Lantana

What is the insect on lantana herewith? I refer to the small insect like a white fly along the stems. What is the treatment? They have destroyed a large thrifty lantana bush and other nearby plants are seriously injured. —Subscriber, Los Angeles.

This question was referred to Prof. H. J. Quayle of the Riverside experiment station and he writes:

"This insect is a species of scale having the scientific name of Orthezia insignis, an insect that attacks a number of greenhouse and ornamental plants. The best means of control is to apply a spray, preferably a kerosene emulsion, if the plants will stand this spray. The difficulty of handling this or any other pest on ornamental shrubs is the danger of injury to the plants. Lantana will probably stand the emulsion of kerosene, and this may be repeated two or three times. Kerosene may be used in the proportion of one gallon to 15 of water with enough soap to make an emulsion."

Almond Hulls Poisoning Soil

What is in almond hulls which prevents growth of vegetation for a long time on land where they are scattered? Most growers burn them.—Subscriber, Vacaville.

This question is asked by M. Sharpe, a Vacaville fruit grower, and we pass it on to our subscribers hoping it may bring out the experience of others.

Pear Leaves Blackened

What is the name of the trouble that turns pear leaves black in the summer, but does not affect the wood and sometimes only half of the leaf?—Subscriber, Vacaville.

Presumably it is not pear blight, for that seldom stops with the leaves or even the tip ends of the twigs. Have other subscribers observed the same behavior of pear trees?

Cull Fruit for Poultry

To what extent can cull tomatoes, apples, or other such cull fruits be profitably fed to poultry; and what is the best method of feeding them?—Subscriber, Hemet.

Tomatoes and fruit may be fed either raw or cooked, as is most convenient, but great care must be taken not to overdo such feeding. There seems no question that heavy feeding of tomatoes checks laying. As to apples the doctors disagree, but it would seem a pity to waste them on chickens, for which they are of doubtful benefit, when the human need is so great. Neither tomatoes nor apples contain any real material for egg manufacture. They are at the best green feed and do not take the place of the grain and animal food necessary to egg production.—J. A. K.

Dry Buttermilk

Where can "dry buttermilk" for poultry feeding be obtained? — Subscriber, Hemet.

I think you must mean semi-solid buttermilk, which comes in barrels and can be had from any of the large supply houses at seven cents a pound. There is also a preparation of dried skim milk which is used for chicks. Sometimes this can be had at supply houses and sometimes not. The semi-solid buttermilk is a standard preparation shipped from the Middle West and largely used by poultrymen hereabouts.—J. A. K.

How Much Feed?

Can you tell me approximately the number of pounds of feed, (barley and milo) grain and mash. required to grow Rhode Island Red stock up to fryer size, three to three and a half pounds?—Subscriber, Live Oak.

According to figures tabulated by the Connecticut station, a Rhode Island Red requires three pounds of feed for the first pound of weight, 3.2 pounds for the second pound of weight, 6.5 pounds for the third pound of weight and ten pounds for the fourth pound of weight. Approximately, then, 18 pounds of feed would be needed to bring a chick to three and one-half pounds in weight.—J. A. K.

INFLUENZA PREVENTIVES

The United States public health service by Surgeon General Rupert Blue is giving information regarding epidemic influenza and precautionary measures, which may be taken. From the summary of the bulletin we quote the following sanitary suggestions:

Attention to cleanliness of the mouth, adequate ventilation, avoidance of exposure to cold, and isolation from those who may be carriers of virulent pneumococci and streptococci are measures advisable to prevent complications. Aspirin or similar remedies may be used to relieve headaches and general pains. Watch should be kept for complications, and cases should not be discharged too early.

Crowded offices, and particularly street cars, are potent factors in the spread of the disease. In Berlin the street car conductors showed an exceptionally high incidence. The avoidance of street cars and of crowds, where possible, is therefore to be urged during an epidemic, although the disease is too mild to make it advisable to stop all the activities of a city. To prevent the transportation of the influenzal virus to the well and possible causes of complications to the sick, masks for sick-room attendants are advisable. The organism is probably short lived outside the body, and attention should be directed toward keeping people apart rather than toward the disinfection of things, aside from the precautions of general cleanliness. The spread of streptococcus pneumonia in military camps, and the fear that with the advent of cool weather severe pulmonary complications will follow influenzal attacks more frequently than during the past summer, indicate the urgent need for the adoption of more stringent precautions to prevent such complications than have been customarily taken hitherto.

The most dangerous form of human contact in the presence of epidemic influenza is, in all probability, that with coughers and sneezers. Coughing and sneezing, except behind a handkerchief, is as great a sanitary offense as promiscuous spitting, and should be equally condemned.

GROW A GARDEN

The International Harvester Company of Chicago is appealing for greater production and, in fact, aiding materially in greater production, especially along home garden lines, by the publication of "Grow a Vegetable Garden," a 42 page book filled with illustrations of labor saving devices, with planting tables and general garden hints.

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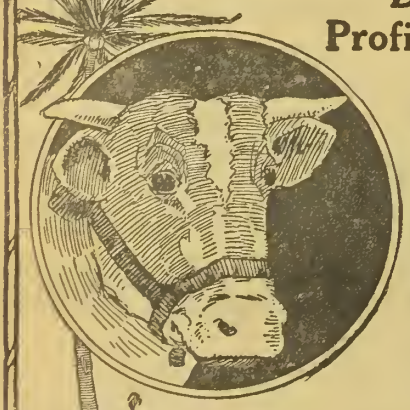

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About Sheep for Beginners

IN a bulletin of the Illinois state experiment station we note some hints for the beginner in the sheep industry. A few of these hints may have interest for California farmers who have occasionally waste ground which should be turned into mutton and wool.

The selection of the right kind and the proper number of sheep are large factors in the success of the beginner in flock husbandry. High prices for mutton and wool have brought about an unusual demand for breeding sheep. Many flocks are being established throughout the middle western and eastern parts of the United States and flock owners who have been keeping sheep for a number of years are disposed to retain all their good females. As a result, breeding ewes are so scarce that there is a good market for the undesirable kinds. But it is a mistake for anyone, especially for a beginner, to buy these inferior grades. Rather than to buy unthrifty ewes, improperly bred for producing lambs and wool on a profitable basis, it is better, as a rule, not to start with sheep at all.

Number of Ewes

The beginner can learn more about the types and habits of sheep from a small flock than he can from a large one. If he has a flock of 25 ewes, it is easily possible for him to take note of the capacity of each for producing lambs and wool. He develops a conception of the type of ewe that is prolific, motherly, and able to produce enough milk to grow her lambs rapidly. By observing certain individuals from day to day, he also becomes familiar with the habits of sheep and learns to know when they are slightly "off" in health. Often a little attention in the first stage of illness will restore a sheep to complete health, but if it is neglected until it no longer attempts to stay with the flock the task of treating it is much more difficult.

The beginner should buy enough sheep, however, to justify giving them adequate attention. Except in certain periods such as lambing time, 15 to 25 ewes require little, if any, more care than from two to ten head. A busy man with three or four sheep on his hands will find that they require more time than the returns will justify, and he will be tempted to neglect them. Even boys and girls above 12 years of age, enrolled in the lamb clubs, would better have from four to ten ewes rather than only two.

Owners of large farms who are experienced in handling classes of live stock other than sheep may find it advisable to start with a carload of ewes. By handling such a number on a large farm, the flock is more likely to receive proper attention, and in selling the lambs there is a distinct advantage in having enough to make a carload.

Where to Buy

The beginner desiring 25 ewes or less should select, if possible, from healthy well-bred flocks in his home community. He will know more about his ewes than he would were he to purchase them on the open market, and he avoids a heavy freight bill. But in many cases there are no desirable ewes for sale in the home community and the only recourse is to go to commission firms on the open market or to dealers operating outside of established markets. Before purchasing from any dealer, satisfactory information relative to his ability and integrity should be obtained.

Kind to Buy

There are two general classes of ewes, natives and westerns. The natives are produced in the farm flocks of the middle west and east; the westerns in the large flocks or bands kept on the ranges of the west. As a rule, the natives are larger and fatter than the westerns and hence cost more per head.

At the Fresno Fair

By R. P. Royce

(Continued from last week.)

SWINE SHOW

The swine show was the best balanced of any of the live stock exhibits. Nearly every class of Poland-Chinas and Durocs was well filled. Only two Berkshires were in the pens. Considerable interest was manifested in the judging and exhibitors stated that inquiry for breeding stock was keen throughout the week.

King Big Bone Leader, grand champion Poland-China boar at Sacramento, was shown again to the championship by his owners, Chas. Gatewood and Son, Fresno. H. I. Marsh, Modesto, had his remarkably good herd entered. This is one of the strongest herds that has been brought out in this state, and it is doubtful if any California herd has shown as many real big sows as the Marsh entries. His aged sow, Big Knox Girl, was made grand champion sow.

J. E. Thorp, Lockeford, had the grand champion Duroc sow. W. F. Fulgham & Son, Visalia, won the boar championship on a seven year-old-boar. Thorp showed the junior sow pig that won the state fair futurity but she only succeeded in getting third to two shown by H. Cummins, Visalia.

Professor J. I. Thompson, of the University of California, judged all the hog classes.

Poland-Chinas

Exhibitors: H. I. Marsh, Modesto, Chas. Gatewood & Son, Fresno; F. Gatewood, Fresno; A. Buckland & Son, Fresno.

The awards:

Aged boar—1, H. I. Marsh.

Boar, one year old and under two—1, Chas. Gatewood & Son.

Senior boar pig—1, H. I. Marsh. 2, F. Gatewood. 3, Chas. Gatewood & Son.

Junior boar pig—1 and 2, H. I. Marsh.

Aged sow—1 and 2, H. I. Marsh. 3, Chas. Gatewood & Son.

Sow, one year old and under two—1 and 2, H. I. Marsh.

Senior sow pig—1 and 2, H. I. Marsh. 3, Chas. Gatewood & Son.

Junior sow pig—1, H. I. Marsh. 2, A. Buckland & Son. 3, Chas. Gatewood & Son.

Sow and six pigs—1 and 2, A. Buckland & Son. 3, F. Gatewood.

Boar and three sows—1, H. I. Marsh. 2, Chas. Gatewood & Son.

Champion boar—Chas. Gatewood & Son.

Champion sow—H. I. Marsh.

Duroc-Jerseys

Exhibitors: J. E. Thorp, Lockeford; Henry Cummins, Visalia; W. F. Fulgham, Visalia; C. E. Ellis, Tulare; Allen Thompson, Tulare.

The awards:

Aged boar—W. F. Fulgham & Son.

Boar, one year old and under two—1, Allen Thompson. 2, J. E. Thorp.

Senior boar pig—1 and 2, Henry Cummins. 3, Allen Thompson.

Junior boar pig—1, J. E. Thorpe. 2, Henry Cummins. 3, Allen Thompson.

Aged sow—1, J. E. Thorpe.

Sow, one year old and under two—1 and 2, J. E. Thorpe. 3, Allen Thompson.

Senior sow pig—1, C. E. Ellis. 2, Allen Thompson. 3, C. E. Ellis.

Junior sow pig—1 and 2, Henry Cummins. 3, J. E. Thorpe.

Sow and six pigs—1, W. F. Fulgham & Son. 2, Allen Thompson.

Aged herd—1, J. E. Thorp. 2, Allen Thompson. 3, W. F. Fulgham & Son.

Young herd—1, Henry Cummins. 2, J. E. Thorpe. 3, C. E. Ellis.

Champion boar—W. F. Fulgham & Son.

Champion sow—J. E. Thorpe.

THE SHEEP

J. Bidegaray, Fresno, was the only exhibitor of sheep but he entered nearly 100 head of Rambouillet and Hampshires.

AN INTERESTING COMPARISON

J. W. Coppini, a dairyman at Ferndale, Humboldt County, whose three years' experience in cow testing has resulted so remarkably, sends tabulated statement from his cow testing records for the three years. From March, 1906, to March, 1907, his 20 cows averaged 8,108 pounds of milk and 327½ pounds butterfat. His milk that year tested four per cent. His cows were all common, no particular blood predominating. The cows were pastured the year round and fed in addition a liberal ration of roots in the fall and winter months.

Another test from January 1, 1909, to January 1, 1910, showed the average production per cow to be 7,447 pounds milk, testing 4.9 per cent; average butterfat production, 367½ pounds. Four of these cows were registered and ten grade Jerseys, seven common or mongrel cows.

Another test made in 1917-18 showed an average for 22 cows; milk, 8,997 pounds, averaging 5.7 per cent fat, with an average butterfat per cow of 510.09 pounds. The herd consisted of ten registered and 12 high-grade Jerseys. Pasturing was continued, though from March until roots were ready green grass and clover were cut and fed in the barn and the cows received a ration of concentrates twice daily commencing about six weeks before cow freshened.

There is nothing startling in these records made by Mr. Coppini's herd. It is not a large herd; it is not handled as a plaything by a man of wealth; but is merely a dairy conducted to make a living for the family of the owner. Careful testing at times under the supervision of the University of California has, however, shown Mr. Coppini wherein his herd was weak, and the unprofitable cows have been sent to the block and others of more desirable strain purchased or bred up.

PERCHERON SOCIETY ANNUAL

The next annual meeting of the stockholders of the Percheron Society of America will be held in Chicago December 2. The Percheron judging at the International Live Stock Exposition begins early the following morning.

The future of draft horse interests is especially bright. Shortage of men is compelling greater utilization of horse power. Six and eight horse teams will be as common within the next two years as four horse teams have been in the past. The use of more heavy horses will increase the daily work done by each man on our farms by 50 to 100 per cent. Eight and ten horse teams have been common for years on the Pacific Coast. Fifty acres plowing per week is the average per man. As horsemen and farmers, we must learn to use these larger units of horse power effectively, thereby increasing the demand for good Percheron horses.

Percheron breeders in America are gratified over the recent sale and shipment of 26 Percheron fillies and one stallion to Great Britain. These are already on the way overseas. They were purchased by Hon. Alexander Parker, who spent some time in America as a purchasing officer in the British Remount Service.

Additional shipments are sure to follow and our American Percheron breeders will undoubtedly exert themselves to build up a favorable export trade not only with Europe, but with Australia and New Zealand.

OUTPUT OF MILL FEEDS

To acquaint farmers with conditions prevailing in the mill feed industry the food administration outlines developments that may be useful as a guide when purchasing feeds. Most of the European countries have gathered their harvests and are now grinding wheat. The foreign demand for flour from the United States has slackened and has been replaced by a considerable demand for American wheat.

Shortage of animal feeds prevails among all the Western allies, who now prefer to purchase wheat rather than to buy flour and mill feed separately. Wheat can be loaded very rapidly aboard ship on the American seaboard by mechanical conveyors. This operation consumes much less time than loading the equivalent of wheat as flour and its by-products and saves space.

One result of this development is a temporarily light production of wheat mill feeds in the United States. It should be recognized, however, that even with normal production of such feeds, the demand was expected to exceed the supply since the schedule of fair prices establishd for feed at the suggestion of the agricultural advisory committee has made it very cheap, much cheaper in fact than it is worth compared with other feeds of equal nutritive value.

The reduced output of wheat mill feeds is accompanied fortunately by an unusually large production of certain coarse grain products. Food administration regulations provide for an extraction from barley of only 55 per cent flour, leaving nearly 45 per cent of the barley berry for feed which is remarkably rich and nourishing. Barley feed in itself is not a substitute for bran but needs to be mixed with other light material, such as oat feed, to give bulk. There is an ample supply of oat by-products at prices averaging less than the cost of bran.

As a result of the large wheat crop the "fifty-fifty" rule requiring the purchase of equal amounts of substitute cereals with wheat flour has been modified, and this is expected to increase the output of American flour mills and result in more mill feeds.

The food administration recognizes that the amount of brewers' grain is less than normal and distillers' grains have almost disappeared from the market. Corn by-products, though uncontrolled in price, are plentiful. The period for which these conditions are likely to prevail is undetermined, but the situation will be materially changed when foreign orders for flour from this country are again being filled.

Wheatless days in America make sleepless nights in Germany.

The Bargain Sale

90 Registered Holstein-Friesian Cows
15 Registered Holstein-Friesian Bulls

at Public Auction

for

A. W. Morris & Sons Corporation

Woodland, California **Tuesday, November 12, 1918**

It is easy to forecast the many wonderful bargains that buyers will find in this sale, for there will be sold some of the great cows that have contributed in no small way toward the world wide fame of the Morris herd as producers, and they are bred to the great quintet of Morris herd bulls, every one of which has sired a world's record daughter or has for a dam a cow that made one or more world's records. No other herd in the world has five herd bulls so qualified.

Just stop and think for a moment that many of these great cows are bound to sell far below their real value because of age, or in some cases lost quarters, and that they are yet vigorous breeding cows and tremendous producers of milk and butter, and then consider also that many of them are due to drop calves from a week to two months after sale to the service of wonderful sires whose get command top prices whenever offered.
It will be a golden opportunity to buy the highest priced blood in the west at ordinary prices. As a sample of what the sale will contain just look at a dozen of the individual cows listed in the squares below.

PET SALAMBO OF RIVERSIDE
Butter seven days 33.03
Milk 365 days 22,287.00
Butter 365 days 1,003.80

LEDA GERBEN ALCARTRA 2ND
Butter seven days 29.87
(As a senior four year old.)

CONTENTA CREAMCUP
Butter 365 days 811.00
Milk, Over 20,000.00

CREAMCUP
Butter 365 days 877.00
Milk, over 19,000.00

LUIT BURKE
Butter seven days 32.75
(As a junior four year old.)

LAURA NETHERLAND GERBEN 2D
Butter seven days 28.43
Butter 365 days 780.00

LEDA HARTOG TIETTIE ALCARTRA
Butter 365 days 845.00
Milk, over 19,000.00

ARABELLA E 2ND
Butter 365 days 843.00
Milk, over 20,000.00

PAULINE CREAMELLE MERCEDES
Butter seven days 30.21
Milk 614.30

PEARL BEETS 2ND
Butter seven days 27.34
(As a senior three year old.)
Butter 365 days 678.60

MISS GELSCHE WALKER KORNDYKE
Butter seven days 23.16
(As a junior two, former state record.)

IMPERIAL BONITA
Butter 365 days 762.00
Milk, over 18,000.00

Keep In Mind These Facts:

EVERY ANIMAL IN THIS SALE is positively guaranteed to be a breeder.

NO ANIMAL IN THIS SALE is tuberculin tested.

TWENTY-FIVE FRESH COWS will be in this sale.

A VERY LARGE NUMBER OF HEAVY SPRINGERS in calf to King Mead of Riverside, Prince Gelsche Walker, Sir Aaggie De Kol Acme, and Segis Pontiac De Kol Burke will be sold, besides a few in calf to King Korndyke Pontiac 20th, the $6500 son of Miss Valley Mead De Kol Walker, and one cow bred to Segis Pontiac Abbekerk, the 35 pound bull that sold for $3200 last spring.

THIRTY YEARLY RECORD COWS with records up to over 24,000 pounds milk and over 1000 pounds butter will be sold.

THERE WILL BE 38 COWS with seven day records from 20 to 33 pounds butter, three of them above 30 pounds.

Catalog in preparation. Write for one.

Management

California Breeders Sales and Pedigree Co.

J. M. Henderson, Jr., President — C. L. Hughes, Sales Manager

Sacramento, California.

Auctioneers—Col. Ben A. Rhoades; Col. Cy N. Clark.

PURE BRED REGIST'D HOLSTEINS

Tuberculin Tested State Supervision Individuality Breeding Production Butter Fat Everything Guaranteed

King Korndyke Pontiac

(shown above)

is transmitting a high excellence of type and production to his sons and daughters. His daughters are the straight backed, wide hipped, deep bodied sort with well balanced udders of good form and texture, and good, well placed teats.

His sons are uniformly well marked, straight in topline, deep in chest and barrel, strong boned, with plenty of quality and vigor. Why not buy one of his young sons now, while our prices are still far below real value. Remember that we will give you most liberal terms on your payments.

Prince Gelsche Walker Korndyke

(shown below)

JANE GARDEN FARM.
SACRAMENTO — CALIF.
FRED W. KIESEL PROP'R.
C. W. YOUNG SUP'T.

We Have Been Telling You

that PRINCE RIVERSIDE WALKER is siring a mighty fine lot of calves in our herd, and prospective buyers who have come to look at his young sons have agreed with us for we have sold right down to calves all the time.

Now we have some expert opinion on the young sons and daughters of "Prince," in the form of awards at the recent California State Fair in the hot competition of the younger classes. Sons and daughters of PRINCE RIVERSIDE WALKER were placed as follows by Judge Scribner:

First Junior Bull Calf.
Fifth Junior Bull Calf.
Reserve Junior Champion Bull.
Second Senior Heifer Calf.
Fifth Senior Heifer Calf.
Reserve Junior Champion Heifer.
First Prize Breeders Young Herd contained some of his daughters.
Second Prize Calf Herd.
First Prize Produce of Dam, won by his twin sons.

Hadn't you better consider one of his young sons to head your herd, securing a rare combination of breeding and type?

Our Entire Herd is Tuberculin Tested

P. S.—Our junior herd sire, King Korndyke Pontiac 20th, was a second in class at the State Fair to the bull that was again made grand champion.

Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

Santa Anita Rancho

Anoakia Breeding Farm

REGISTERED HOLSTEINS

A herd of fine individuals, strongly bred in the lines of great production as evidenced by both short and long time records, handled in a manner to produce sound, healthy breeding stock.

Prince Walker Cornucopia

Our junior herd sire, is sired by PRINCE GELSCHE WALKER, and out of a 34.14 pound granddaughter of the first 30 pound cow, Sadie Vale Concordia. He is the highest record son of Prince Gelsche Walker in service. We have for sale a few choice young bulls.

SANTA ANITA RANCHO *Santa Anita, Cal.*
Anita M. Baldwin, Owner *W. H. Taylor Supt.*

Duroc-Jersey Breeders Annual Meeting

Written for California Cultivator by R. P. Royce

THE annual meeting of the Southern California Duroc-Jersey Breeders' Association was held Thursday evening, October 10, at the Reynolds Hotel, Riverside.

A dinner was served, during the course of which plans were discussed for more effective breed promotion work. The association has accomplished much good and deserves no little credit for the popularity of the red hog in Southern California, but the members do not intend to rest on their oars. Plans for closer co-operation with the State Swine Breeders' Association and the Western Duroc-Jersey Breeders' Association were put under way. The meeting disclosed one of the reasons why this association is forging ahead—there is the finest spirit of cooperation among the members. Petty jealousies are not tolerated and every member is trying to help the breed.

A number of important matters will come before the swine men of the state this winter and it will require organized effort on the part of the breeders and feeders if their interests are protected. A pure feed bill will be introduced before the legislature this winter and unless the swine organizations are "on their toes" it will be smothered in a committee. The Southern Duroc Association will actively support this bill.

The following officers were elected for the current year:

President, Dr. Michael Creamer, Los Angeles; vice president, R. B. Peters, Devore; secretary-treasurer, R. K. Walker, Bonita, San Diego County; directors: H. S. White, Chino; H. H. Braly, Newbury Park; W. B. Hewitt, Van Nuys; Donald Grahm, Lancaster.

The next meeting will be a joint meeting with the Western Duroc-Jersey Breeders' Association during the Liberty Fair at Los Angeles .

Rodent Control

By A. H. Call

With the establishment of the rodent control division of the office of the state commissioner of horticulture, one of the most serious drawbacks to the ground squirrel eradication work in the 58 counties of California was removed. Formerly much opposition was encountered when the county horticultural commissioner, officially in charge of ground squirrel eradication, contemplated clean-ups in portions of his county which, due to brushy and hilly character of its topography, existed in uncultivated state in more remote portions. The hue and cry always was raised that nothing could be done as the state and government lands adjoining were badly infested. In most cases such statements were untrue, but to preclude this possibility the state board of control approved an emergency appropriation of $40,000 in the spring of 1918, for the purpose of establishing a rodent control central office, with the state commission of horticulture, to have direct charge of squirrel eradication on state lands, and to assist the county horticultural commissioners. This office has established five control districts with a trained man in charge of each. By a cooperative agreement with the United States biological survey, which has charge of squirrel eradication on government lands and national forests in California, it has been possible to clean up state and government lands in conjunction with the rodent control divisions field crews. In return the United States biological survey crews are cleaning up state lands wherever their crews are operating. In this manner approximately 125,000 acres have been relieved of the ground squirrel pest by these federal and state agencies during the past summer.

Autoroi of Undesirables

Here is evidence of some of the strenuous work performed in Ventura County. Five hundred and fifteen squirrels gathered after one poisoning. Poison was put out in the morning and the harvest was the result of an hour and a half's work in the afternoon in a 200 acre field.

Guernseys

Continued from Page 383

Awards: Bull, two years old or over—1, May King of Fernridge, Grandview Dairy; 2, Cora's Glen, Hollow-Hill Farm. Bull, senior yearling—1, Effie's King of Hollow-Hill Farm, Hollow-Hill Farm. Senior bull calf—1, Grandview Dairy; 2, Hollow-Hill Farm. Junior bull calf—1, Ross King of Hollow-Hill Farm, Hollow-Hill Farm. Grand champion bull—May King of Fernridge, Grandview Dairy. Aged cows—1 and 2, Imp. Cherry III of the Effords and Caroline of Chilmark, Hollow-Hill Farm. Senior yearling heifer—1, Grace King of Hollow-Hill Farm, Hollow-Hill Farm. Junior yearling heifer—1 and 2, Rosa King of Hollow-Hill Farm and Pearl King of Hollow-Hill Farm, Hollow-Hill Farm. Senior heifer calf—1, Bess King of Hollow-Hill Farm, Hollow-Hill Farm. Junior heifer calf—1 and 2, Hollow-Hill Farm. Grand champion cow—Imp. Cherry of the Effords III, Hollow-Hill Farm. Aged herd—1, Hollow-Hill Farm. Young herd—1, Hollow-Hill Farm. Calf herd—1, Hollow-Hill Farm. Get of sire—1, get of Cora's Glen, Hollow-Hill Farm. Produce of dam—1 and 2, produce of Cora's Beatrice and Imp. Angrosia 3rd, Hollow-Hill Farm.

Ayrshires

E. B. McFarland, San Mateo, was the only exhibitor of Ayrshires.

Duroc-Jerseys

The feature of the swine show was the large exhibit of Duroc-Jerseys, and the feature of the Duroc-Jersey exhibit was the splendid fitting and exceptional size of the young stuff. Several of the exhibitors were making their first show, but their entries would have been a credit to old showmen. The older classes were not always well filled, but several outstanding animals were driven out. The champion sow, Model Defender Lady, would not be out of place in any show. She is a sow of extreme size, yet has quality "to burn," and possesses that sweet feminine quality the breeder looks for in a real brood sow. The aged boar, Cherry Volunteer 2d, shown by Dr. Creamer, made a very satisfactory champion, though the junior pig of Thorp's gave him a run for the purple.

The junior pig classes were particularly interesting on account of the Futurity in which nearly all were entered. W. B. and E. W. Hewitt were first and second on boar pigs. Creamer won the sow pig division and also the litter. In the open classes, Thorp's boar and sow pigs were too much for the local entries.

Exhibitors were: W. M. Taylor, San Bernardino; Dr. Michael Creamer, Los Angeles and Owensmouth; Windsor Ranch & Peters, Lamson & Walker, Bonita, San Diego County; Pendergast Ranch, San Bernardino; Falfadale Farm Perris; Golden Model Stock Farm, Van Nuys; J. E. Thorp, Modesto; H. S. White, Chino; George Junior Republic, Chino.

Aged boars — 1, Creamer; 2, White; 3, Falfadale Farm. Boar, senior yearling— 1, Thorp. Boar, junior yearling— 1 and 2, Creamer. Senior boar pig— 1 and 3, Falfadale Farm; 2, George Junior Republic. Junior boar pig— 1, Thorp; 2 and 3, Hewitt. Senior and grand champion boar—Cherry Volunteer 2nd, Creamer. Junior champion boar—Thorp. Aged sow—1 and 2, Windsor Ranch & Peters, Lamson & Walker; 3, Thorp. Senior yearling sow—1, 2 and 3, Falfadale Farms. Junior yearling sow— 1, Windsor Ranch & Peters Lamson & Walker; 2 and 3, Thorp. Senior sow pig— 1 and 2, Falfadale Farm; 2, Windsor Ranch & Peters, Lamson & Walker. Junior sow pig— 1, Thorp; 2, Creamer; 3, White. Senior and grand champion sow— Model Defender Lady, Windsor Ranch & Peters, Lamson & Walker, Junior champion sow—Thorp. Aged herd— 1, Falfadale Farm. Young herd— 1, Thorp; 2, Falfadale Farm. Young herd bred by exhibitor— 1, Thorp; 2, Falfadale Farm; 3, Creamer. Get of sire— 1, Creamer; 2, White; 3, Thorp. Produce of dam— 1, Creamer; 2, White; 3, Thorp.

Futurity: Junior boar pig— 1 and 2, Hewitt; 3, Creamer; 4, White; 5, Falfadale Farms. Junior sow pig— 1, Creamer; 2 and 5, White; 3, Hewitt; 4, Falfadale Farms. Litter— 1, Creamer; 2, Hewitt; 3, White; 4, Falfadale Farms.

Poland-Chinas

The Poland-China show was a trifle out of balance. By the time the Hartsook and the Marsh entries cashed in there was little left for the local herds. However, the losers can console themselves with the knowledge that they were shut off by some of the best hogs seen on the California circuit in a number of years. The Hartsook aged boar, I. B. A. Wonder, was easily champion boar. This boar is really remarkable in that in spite of him being five years old he sports his great size with the ease of a pig—and is a lot better on his feet than the majority of youngsters. The second prize aged boar shown by Christensen is very smooth and mellow, and attractive, when viewed from the side, but lacks somewhat in spring of rib and is none too strong on his pasterns.

The five aged sows, all owned by Hartsook, are a show in themselves. The writer does not recall having seen five as good sows shown by one owner. The Sacramento champion Big Knox Girl, added another championship to her long string.

Exhibitors were: Fred Hartsook, Lankershim; H. I. Marsh, Modesto; Poland-China Ranch, San Bernardino; I. F. Davis, Redlands; H. Christensen, Riverside.

Awards: Aged boar— 1, Hartsook; 2, Christensen. Boar, senior yearling— 1, Poland-China Ranch. Senior boar pig— 1 and 2, Marsh; 3 Hartsook. Junior boar pig— 1 and 2, Marsh; 3, Christensen. Senior and champion boar—I. B. A. Wonder, Hartsook. Junior champion boar Marsh. Aged sow— 1, 2 and 3, Hartsook. Sow, senior yearling, 1 and 2, Hartsook. Sow, junior yearling— 1, Marsh; 2, Davis. Senior sow pig— 1, 2 and 3, Hartsook. Junior sow pig— 1 and 2, Hartsook; 3, Christensen. Senior and grand champion sow, Big Knox Girl, Hartsook. Junior champion sow, Hartsook. Aged herd— 1, Hartsook. Young herd— 1, Marsh; 2, Hartsook; C, Christensen. Herd, under one year, bred by exhibitor— 1, Marsh; 2, Christensen. Get of sire— 1, Marsh; 2, Christensen; 3, Davis. Produce of dam — 1, Christensen; 2, Poland-China Ranch; 3, Marsh.

Berkshires

F. L. Hall, Perris, had everything his own way in the Berkshire classes, winning every first and all championships. The Fontana Ranch also competed.

Hampshires

The Llano Vista Ranch, Perris, had entries in all Hampshire classes and practically swept the platter clean, losing only the junior yearling boar class. This class was won by the Fairbanks Estate, Redlands.

Milk Goats

After completing the task of judging the goat show, the judge declared that he had never seen a finer collection of Toggenburg goats. He stated that while there had been a few goat shows held in this country, it was the first time such a feature had been offered by an agricultural fair. One hundred Toggenburgs, Saanens and Anglo-Nubians were on exhibit.

For the first time a class was provided for American Toggenburgs. A goat carrying 31-32 imported Toggenburg blood is eligible to the show in this class.

Sheep

John E. Marble, Redlands, exhibited Dorsets and Geo. W. Thomas, Arlington, exhibited a few Shropshires.

Boys' Pig Club Contest

During the past year the Farm Bureau of Riverside County has been active in organizing boys' and girls' pig clubs, and in order to encourage the clubs special classes were provided at the Southern California Fair. The awards were: 1, Charles Grahm, Owensmouth; 2, Harold Taylor, San Bernardino; 3, Albion Hendricks, Perris; 4, Howard Henrichs, Perris; 5, Rupert Hendricks, Perris; 6, Fred Cutter, Chino.

THE BEST LINIMENT
OR PAIN KILLER FOR THE HUMAN BODY
Gombault's
Caustic Balsam
IT HAS NO EQUAL

For the Human Body — It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Boils, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Sore Lungs, Rheumatism and all Stiff Joints

REMOVES THE SORENESS--STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER.

Price $1.75 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet K.

The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

Herefords · Shorthorns
250 Head Eastern
Registered Bulls and Cows
HARRIS & SONS
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Get Stock Profits Now

Don't wait until another year. Speed up your stock *now*—sell more products on the *present high market.* Cash in while market conditions are in your favor.

PRATTS ANIMAL REGULATOR
The Original Guaranteed Stock Tonic and Conditioner

will quickly put your horses, cattle, sheep and swine in perfect physical condition, able to do more, to earn more dollars for you. Test it today, with any kind of live stock, *at our risk.*

Pratts Animal Regulator brings strength and vigor. It is a combination of tonics and conditioners used with the regular ration. It improves appetite and digestion—prevents feed waste—regulates the bowels—purifies the blood—puts "pep" into stock of all kinds. Its regular use prevents loss, increases production, insures profits.

Our dealer in your town has instructions to supply you with Pratts Preparations under our square-deal guarantee—*"Your money back if YOU are not satisfied"*—the guarantee that has stood for nearly 50 years.

Write for big Stock Book—FREE

PRATT FOOD COMPANY
Philadelphia Chicago Toronto

Pratts

574

Grand Champion Boar

Grand Champion Sow
Sacramento State Fair

Berkshires

Forty-three of our litters this year averaged ten to the litter. We sell foundation sows and boars to head your herd from our easy keeping, heavy producing strains. Write to

JAMES MILLS ORCHARDS, Hamilton City, California

Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, $2145 cash awards. Write to

M. Bassett
Hanford, Kings County, Cal.

Raising the Standard of California Bacon

MONTELENA HERD
Large Yorkshires

Have large litters. Service boars of exceptional quality, in best breeding condition. They are strong, active, long, deep fellows, with big bone and splendid heart girth. Come and see them, or write to

A. L. TUBBS CO.
Calistoga - California

Sir Aaggie De Kol Acme 2nd

Five of his seven nearest dams average:
Milk one year....24,089.88 pounds
Butter ..... 1,105.07 pounds

This butter average is equalled by only one other bull of service age in the world. Buy your next bull from

Eldorado Herd
Alex. Whaley, Owner Tulare, Cal.

Prince Hiske Walker

He is by Prince Gelsche Walker and out of Hiske of Riverside, being therefore full brother to Lady Hiske Walker, 34.25 pounds butter in seven days as a junior four year old, former state record in class.

His offspring are uniformly straight, vigorous, and well marked. A few of his young sons for sale.

Packwood Farm
W. F. Mitchell, Owner Visalia, Cal.

Creamcup Holsteins Headed by the 33.92 pound bull Creamcup Champion Pontiac
Burke. A few young bulls for sale. M. M. HOLDRIDGE, Rt. A, Box 437, San Jose, Cal.

Complete
Dispersal Sale

Absolutely Nothing Reserved

We have 40 cows and heifers, heavy springers, or will be fresh at sale time, THESE ARE REAL PRODUCERS—THE NICE straight individual Kind. Eighteen daughters are from very choice dams and the 38 pound sire which we formerly owned. There are ten A. R. O. cows from 24 pound two year olds up to 28.170 pound cow. Eight choice heifers from A. R. O. dams. Daughters of King Model, King of the Pontiacs, and It. A son of King of the Pontiacs from 30.16 pound daughter of Tidy Abbekirk Prince, who has 84 A. R. O. daughters. King Pontiac Bettina No. 204947 is as nice an individual as you often see.

A son of King Korndyke Sadie Vale, whose two dams average 34.56 pounds in seven days and whose five dams in direct pedigree average 33.514 pounds, these bulls are under two years of age and ready for heavy service and very desirable. One son of Rag Apple Korndyke 8th, from an especially fine dam.

Remember he is half brother to the $53,200 bull. A bunch of young heifers and some good young bulls. In all about 85 head. Tuberculin tested by state authorized veternarian. With a 60 day retest privilege given.

If we can't please you we don't want your money. We want our cattle to be as valuable to you as your money is agreeable to us. Only one old cow, 26 pound, which has a 30.27, and a 24 pound two year old daughter, and two proven sons, the two year old yearling, and weanling, will be in this sale.

Remember the day and date

October 29, 1918

and govern yourself accordingly. Sale will be positive.

Brookdale Stock Farm, consisting of 200 acres well equipped and one of the best in Central Illinois, is for sale.

Also one set of Holstein-Friesian Herd books, complete with exception of Vol 7. There are 48 volumes and eight blue books.

WE ARE GOING OUT OF THE BUSINESS FOREVER.

For Catalogs Address

I. J. CASE

Alta **Illinois**

N. W. Thompson Imported and American Bred

Percheron, Belgian and Shire Stallions

My new shipment of Stallions has arrived consisting of Percherons, Belgians, and Shires personally selected by me from the best breeding sections of Iowa, Illinois and Indiana.

Two, three and four years old that weigh a ton and better. The heavy boned, clean legged kind with lots of style and action.

The largest collection of high class Stallions west of the Rocky Mountains.

Prize winners at this year's big Eastern shows. Life Insurance and State Certificate of Soundness furnished with every horse. If in need of a really high class Stallion come and inspect my horses or write for full particulars. I can suit you in price, quality, and terms.

N. W. Thompson

Patterson, Stanislaus Co., Cal.

Ranch Adjoins Town

California International

California International Livestock Show scheduled to be held in San Francisco November 2-10. A large amphitheater is now being constructed at 12th and Market Streets. It will have a seating capacity of 2500 and horse show and pure bred stock parades will be featured every day of the show.

Joseph E. Painter, general manager of the livestock show, announces the closing of the entries and declares that there will be an unusual showing of Herefords and Shorthorns; the quality and quantity of which are representative of the enterprise of the Western breeders.

The building of the exposition is under the direction of Edward H. Brown, general manager of the Home Industry League, who is assistant to the president, Edgar J. DePue of the California International Livestock Show. The Home Industry League generously loaned Mr. Brown's services to Mr. DePue for the period of the expositlon.

Under the auspices of the San Francisco Poultry Association and of the Pacific Coast Rabbit and Cavy Breeders' Association, poultry and rabbits will form an attractive feature of the livestock show. The Hopland Stock Farm of Hopland, California, has entered a representative herd of registered Shorthorns, while the Hereford Corporation of Cheyenne, Wyoming, owners of the largest registered herd of Herefords in the world, are sending a carload of their cattle. John Painter & Sons of Colorado are also shipping their famous Herefords, among them being several champions.

The executive board, of which W. T. Sesnon is chairman, includes Edgar J. DePue, M. H. Esberg, R. B. Hale, C. K. McIntosh, Vanderlyn Stow and F. L. Washburn.

The advisory committee is composed of Ralph P. Merritt, Food Administrator; Dean Thomas Forsyth Hunt, University of California; Fred J. Koster, president San Francisco Chamber of Commerce; C. C. Moore, chairman of state council of defense, and Dr. Ray Lyman Wilbur, president of Stanford University.

The board of directors also includes William H. Crocker, Maurice A. Hall, Frank Honeywell, Fred W. Kiesel, John D. McKee, William Mayo Newhall, Fred M. Pickering, Warren R. Porter, B. F. Schlessinger, T. H. Ramsey and Gordon H. True.

Helps Attack on Animal Tuberculosis

The 1919 agricultural appropriation bill just passed by congress contains an item expected to be of great importance in the federal and state campaign to eradicate tuberculosis among cattle and swine.. It provides that the federal government shall pay indemnity to owners whose cattle are slaughtered because they have been found infected with tuberculosis.

The department of agriculture is to pay one-third of the difference between the appraised value of the cattle and the salvage value of the slaughtered animals, provided that the state, county or municipality in which the cattle are owned and kept is cooperating in the tuberculosis work and pays at least an equal amount to the owner. In no case is the federal government to pay more to the owner than is paid by the state, county or municipality. No payment by the federal government is to be more than $25 for any grade animal or more than $50 for any pure bred animal, and no payment is to be made unless the owner has complied with all quarantine regulations.

This provision is expected to remove much of the opposition among cattle owners that has hindered tuberculosis eradication work. Through it the federal government, the state, county or municipal governments and the owners of cattle will share in the loss resulting from slaughtering infected animals for the protection of other animals not infected.

Accrediting Rules Adopted

Another important development expected to hasten tuberculosis eradication was the unanimous adoption by breeders and live stock sanitarians of national reputation of regulations for accrediting pure bred herds of cattle. This action, taken last December, marked the coordination of efforts of individuals and the state and federal governments for the suppression of tuberculosis in pure bred animals.

On July 1, the department issued its first list of herds officially accredited as free from tuberculosis. The herds numbered on that date approximately 240. The list also named herds that had passed one successful test. They must pass another annual test successfully before being placed on the accredited list.

Annual Loss Is Big

The annual loss from tuberculosis among cattle and hogs is reckoned at $40,000,000 in the United States. The federal campaign to eradicate the disease is of comparatively recent beginning. It has been divided into three well defined projects. The first project is the eradication of tuberculosis from individual herds of pure bred cattle; the second is the eradication of cattle tuberculosis from circumscribed areas; the third is the eradication of tuberculosis among swine.

It is estimated by officials in close touch with available records that 15 per cent of pure bred cattle in this country are affected with tuberculosis. In grade cattle and swine the percentage of infection is gradually increasing, as shown by post mortem records in establishments where meat inspection is maintained. Infected animals are not only dangerous to other animals but may transmit the disease to mankind through milk and flesh.

Foot and Mouth Disease

Public officials, veterinarians and stock owners should be on guard to report immediately any cases of foot and mouth disease that may appear in this country, according to a statement by Dr. J. R. Mohler, chief of the bureau of animal industry, United States department of agriculture. Dr. Mohler said:

"Recent cable news announces an outbreak of foot and mouth disease in England which brings to mind the serious outbreaks of that disease which have been expericnced in the United States.

"Foot and mouth disease has appeared in England from time to time, as it has done in the United States. In

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both countries the past outbreaks have been promptly controlled and eradicated and no cases have occurred in the United States since 1916. Nevertheless the disease makes its appearance at irregular intervals. In this country we may expect its return at any time although every precaution is being taken by the federal authorities to prevent the introduction of the disease, especially from the present outbreak in England. So long as communication is maintained with other countries the danger of the reintroduction of the disease must be acknowledged.

"It is of the greatest importance that a sharp watch be maintained by all officials, by practicing veterinarians, and by stock owners in order that the very first cases may be discovered and the spread of the disease prevented. It would be a great misfortune to the United States if foot and mouth disease should occur under present conditions or become firmly established in the country, as has been the case in many of the stock raising nations of Continental Europe. Early discovery of the disease, followed by prompt elimination of infected centers, is the only way to prevent the United States from becoming permanently infected."

MOVE HEADQUARTERS

The California Alfalfa Growers Association, which has operated for the past two years with its principal place of business at Riverside, has now moved to the Central Building, Los Angeles. The board of directors decided upon making this move in order to better serve the members of the association who are located not only in Riverside County, but also in the Antelope Valley and other contiguous territory which is nearer Los Angeles than Riverside. The association feels that it will be in a better position to serve its customers from its Los Angeles offices than formerly.

The association is a non-profit organization of alfalfa growers located in any part of the state of California, selling hay to car lot buyers at the market price, and performing this function at exact cost to its members. The association will be pleased to interview any alfalfa growers in the state of California at its offices, whether or not at present a member of the association.

The State Grange is in session at Ukiah this week, Tuesday to Friday. The usual annual business is being transacted and addresses by some of the best informed members of the California Grange will be made. The officers for the past year are:

Master, F. L. Hunt; overseer, Roy I. Church; lecturer, Dr. E. C. Abbott; steward, Lee Dudgeon; assistant steward, A. C. Williams; chaplain, Rev. Robert G. Harbutt; treasurer, Michael Farrell; secretary, Martha L. Gamble; gate keeper, Robert Schols; Ceres, Mrs. Lulu C. Eippers; Pomona, Mrs. Mary L. Church; Flora, Mrs. Ella Brangler; lady assistant steward, Miss Mamie Sanford; pianist, Mrs. Alice Winans; executive committee, Thomas Jacob, Geo. R. Harrison, A. Van Maren.

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Tenderfoot: "I don't see what the fellows are kicking about. This soup tastes all right to me."

Second Class Scout: "It would be all right if the cook would admit it is soup. He insists it is coffee."—Boy's Life.

HE HAD!

Christian Scientist: "Nothing is ever lost! Everything in the universe is in its right place at the right time!"

Man from Missouri: "Have you never been seasick?"—Life.

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The First Tulare Sale, dedicating the new Sales Pavilion built by Tulare Livestock Association, is in more than one respect a truly remarkable offering. It will be held at

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This will be a sale of clean, healthy, sound cattle, sold under the best of guarantees.

There will be daughters of Prince Gelsche Walker, King Korndyke Sadie Vale, Spring Farm King, Spring Farm Pontiac Cornucopia, Spring Farm King Pontiac 5th, Sir Skylark Ormsby Hengerveld, Sir Aaggie De Kol Acme, It State Bells, King Ignaro Mead, Mutual Fobes Longfield De Kol, Arcady Pontiac Wayne Hengerveld, Sir Veeman Korndyke Pontiac, Segis Pontiac De Kol Burke, Aralia De Kol Pontiac Segis, King Korndyke Pontiac, King Korndyke Sadie Vale 22nd, King Korndyke Sadie Vale 27th, King Segis Pontiac Jannek, and other record sires, and out of dams with official records up to over 31 pounds butter in seven days.

More High Record Reference Sires Than Have Ever Before Appeared In a Sale In The West

The females in this sale are bred to two 40 pound bulls, one 36 pound bull three 35 pound bulls, one 32 pound bull, two 30 pound bulls, and others of very high record backing both for short time and yearly records, affording an unsurpassed opportunity to buy well bred cows in calf to the greatest bulls ever represented in a single sale in the west without a single exception.

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We have an especially fine bunch of young Guernsey bull calves to choose a future herd sire from. Guernsey bulls cross well with all breeds of cattle and they increase the quality and color of the milk as well as the quantity of milk and butter fat. The Guernsey bull has won the battle with the scrub cow.
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For Sale — Seed Bed Stock, Orange and Lemon Trees, and Avocado Trees of all standard varieties. Walker - Hubbard Nursery Co., San Fernando, California.

5000 Fine Sour Orange seedlings two feet and over ready to bud which we will sell reasonable. Spengler & Rickert, Jasmine, Kern Co., California.

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Largest Herd Swiss Toggenbergs on the Coast. 100 grade does bred to my $1000 Buck, Captain No. 256, A. M. G. R. Association, due to kid in February and March, $40.00 each, lots to suit. Crating $2.00 extra. Stamp. Rae P. Williams, Oakland, California.

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For Sale, Holt Caterpillar Model 18. Has been entirely rebuilt by the Holt Mfg. Co. For information or demonstration phone owner, G. F. Blackwood, Glendora, or Holt Mfg. Co., Los Angeles. Might take good team as part payment but nothing else.

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Wanted 1000 cotton pickers; come at once. Season lasts till February. Pickers can make from $4.00 to $8.00 a day. Steady work, no rain, mild climate; good opportunities for right parties. Pickers' camp on ranches where employed. Myron L. Watson, growers' labor agent, Blythe, Palo Verde Valley, California.

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A few fall boars left by Royal Superbus —also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
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Superba, World's Grand Champion Poland-China boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, California.

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Ranho Rublo Durocs—Thirty of the finest fall gilts we ever raised. Will begin breeding May 10. Write for prices and pedigrees. Some splendid weaned boar pigs for $25.00. Elmer Lamb, Ceres, California.

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For Sale — Poland-Chinas. Will book a few orders for extra quality gilts bred to my best herd boars for spring farrowing. Also a few good herd boars of serviceable age. Write to H. I. Marsh, Modesto, California.

Mule Foot Hogs, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California, "The Blue Gums."

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Castleview Berkshires are the typey, modern, quick-growing kind, choicest blood lines. Prices reasonable. Castleview Ranch, Berkshires exclusively, Santa Rosa.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

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HEWITT'S BIG TYPE POLAND-CHINA gilts and boar pigs. Hewitt & Hewitt, Dixon, California.

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Early Amber Sorghum makes the best silage and produces the greatest tonnage per acre. Recleaned seed 9c per pound f. o. b. Stockton. Fancy recleaned Sudan seed at 18c per pound f. o. b. Stockton, in lots to suit. Aurora Seed Mill, 48 N. Aurora St., Stockton, California.

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For Sale—22 registered Holsteins, 2 great herd sires. One a son of King of the Pontiacs out of a daughter of King Segis Pontiac. The other out of the great cow Alba Sadie Cornucopia Crcetia, 34.14 pounds. The 22 females are all young, 10 milking, 8 to freshen soon, 10 are grand daughters of King of the Pontiacs. Price right. Tuberculin tested. E. O. McClure, R. F. D. 6, Box 8B, Santa Ana, California.

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Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, California.

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For Sale — Polled Herefords; cows with sucking calves and with calf; and yearling bulls. Gay Owen, Calipatria, Imperial County, California.

Sunshine Farm Jerseys — Young bull, ready for light service, for sale. E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Milibrae Dairy, Millbrae, California.

For Sale or will trade for grade heifers, 2 young registered Holstein bulls. Pontiac breeding. F. W. Bowdle, Hawthorne.

REGISTERED JERSEYS FOR SALE. J. R. CARHART, FULLERTON, CAL.

Registered Guernseys for sale. P. J. Weisel, Santa Fe Springs, California.

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Fall Chicks For Sale—400,000 S. C. White Leghorn chicks from free range Hoganized stock only, for delivery from July to December, at very reasonable prices. Fall chicks are most profitable—broilers in ten weeks, pullets lay at five months. We guarantee safe delivery of all chicks to destination. Shipped safely anywhere West of the Rockies. No money in advance, pay on delivery. Special prices on 500 and 1000 lots. Finest hatchery in the world. Established over twenty years. Further information write Must Hatch Incubator Company, 424 Seventh Street, Petaluma, California.

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Initiative Amendment No. 21 proposes to admit dentists from any other State without examination.

35 out of 42 of Our Boys, this year's graduates in dentistry of the University of California, have entered the Army and Navy. When these boys come back, if they do come back—from the fight for freedom — they would have to compete with derelicts and incompetents let in without examination. Why favor the incompetent or derelict slacker?

Vote NO

ON AMENDMENT

No. 21

Joint Committee, Cal. Dental Associations

RIVERSIDE COUNTY COW TESTING ASSOCIATION

One of the most instructive exhibits at the Southern California Fair, Riverside, was that made by the Riverside County Farm Bureau Cow Testing Association.

The association has just completed its first year and will soon have complete records on 900 cows.

For the exhibit, three cows, all from one herd, were selected; two were purebred Jerseys and one a grade Jersey. One had every indication of being a superior dairy cow. One was a very inferior animal. The third cow was rather average in appearance.

The records of the three make plain how impossible it is to select the profitable cow on appearance.

The best individual made a loss of $43.34. The inferior cow registered a profit of only $2.43. The average appearing cow made a net profit of $172.26.

CITRUS BELT MILK GOAT ASSOCIATION OF SOUTHERN CALIFORNIA

During the fair at Riverside the Citrus Belt Milk Goat Association held a special meeting for the purpose of interesting the people of Riverside County in the milk goat industry. The meeting developed considerable interest and resulted in adding a number of new names to the growing list of members. Judge L. A. Bridinger addressed the meeting and congratulated the members on the remarkable showing made at the fair.

Book Review

"HOME AND COMMUNITY HYGIENE"

"Home and Community Hygiene," a text book of personal and public health, by Jean Broadhurst, Ph. D., assistant professor of biology, Teachers' College Columbia University, and published by J. B. Lippincott, Philidelphia, at $2.00 net.

It has often been regarded, and too often shown to be true, that our larger cities are proving more healthful than some of the alleged health resorts at mountain or at seaside. This because of the feeling that nature is sufficient to overcome the carelessness of human beings, without providing proper sanitation. This text book, which is intended to aid all communities and to provide more healthful living conditions, has just been issued by the Lippincotts in their Home Manual Series. It is so planned that any one reading first the two introductory chapters (I and II) may read the remaining chapters in any preferred sequence. Household economics students as well as housekeepers may prefer to begin with Chapter XIII, The Home, passing at any desired point to related chapters. For example, interest in food may suggest next the chapter on food, or on milk; household pets may lead to the chapter on transfer of disease or cleaning methods to the chapter on disinfection. A perusal of the book will convince the people of every home and of every community of the necessity for hygenic care of their surroundings. Some portions of the book are technical but so informing that it will be read with interest. There are 26 chapters, the first two as noted above being of a general nature and others touching upon Food, Milk, Water, Air, Sewage, Disinfection and Quarantine, The Home, Summer Camps, Schools, Infant Welfare, Tuberculosis, Vital Statistics, and many other topics, including a very valuable glossary and appendix.

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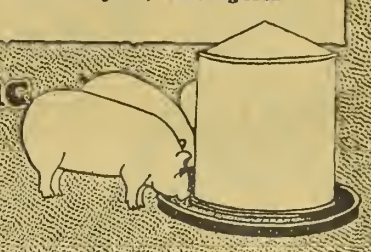

Second Sale

—OF—

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Rooster or Capon, Which?

Written for California Cultivator by Jean A. Koethen

(Continued from last week.)

The age and size for caponizing cockerels varies in different breeds. A Rock should be caponized when it weighs from 1½ to 2½ pounds. A Light Brahma can be successfully caponized up to the time it reaches 4 pounds. In general, the operation should be performed just before the bird begins to crow and the comb and wattle develop and redden. This, in most birds, is from 10 to 12 weeks of age. The birds that are to be caponized should be shut up and kept without food for 36 hours before the operation. Mr. Beuoy gives no water during the 36 hours, claiming that water will cause bleeding after the operation, but other experts allow the bird to drink. All agree, however, that there must be no eating for 36 hours. The following minute directions for caponizing are taken from an article by Henry D. Smith of Rockland, Massachusetts, in the American Poultry Journal:

The operation of caponizing is very simple if one has the proper tools, table, etc. After caponizing a few dozen birds, one can caponize a bird per minute and keep it up, and it can be done in 30 seconds, which shows that it is not a difficult operation. Some use a barrel for an operating table, but this is not as good as a board about 10 inches wide by 20 inches long. Fasten the board at the center on a piece of 2x3 inch joist cut off slanting, so that with one end of the board toward the operator, the left hand side will be about five inches higher than the right hand side. With a wire and a hook to hold the wings, which are held together up over the back, and a weight about like one-half of a brick fastened to a cord two feet long with a small hook on the other end so as to take a turn about both legs, you will then have the bird lying on his left side, with the head from you, the wings fastened by the hook and the legs drawn out straight by means of the weight. The tools are a knife, a wire five inches long with a sharp hook on one end, a spreader and the forceps, a set known as the "Farmer Miles." There is also a set on the market with a few small improvements.

To begin to operate: With the fore finger of the left hand, press and pull the skin back until the finger nail slips over the last rib just forward of the leg. At the same time be pulling off a few feathers with right hand just over the last two ribs, so they will not be in the way for a good clean cut. Now, holding the skin tight as described above take the knife in the right hand and cut, preferably all in one cut or stroke of the knife, the whole length between the two last ribs, from where they are joined together at the top down to where they are joined at the bottom, but do not cut any bone off. This incision should be from one-fourth to three-eighths of an inch deep. Then with the handles of the spreader to the left insert them in the cut, catching the hooks on to each rib so as to spread them apart just a little but not enough to break the ribs. If the incision has been properly made a very thin membrane, called the peritoneum, will be in sight, and with the wire hook begin at the top of the incision and tear a hole the full length, being careful not to rupture the intestines which are just on the inside of the peritoneum. To remove the testicles take the forceps in the right hand with the thumb and finger inserted in the rings the same as in using a pair of scissors, and with the solid flat plate down, force the intestines down when the upper testicle will be in plain sight. But be sure and take the lower testicle first, which is not in sight as a usual thing, but can readily be found as it lies just the other side of the back bone and directly opposite to the top one. Push the forceps in beyond the lower testicle, which is not over one-half inch from the top one, open the forceps enough to take in the testicle and with an upward pressure sort of scrape the back bone in such a way as to drag the testicle out in sight. When it slips off of the wire part of the forceps, catch it on the lower solid side and then shut the forceps together taking in the testicle. Now pull back a little so as to be sure that you have caught no other organ, and with a twisting motion to bring the thin membrane that encloses the testicle into a string instead of a bag, and at the same time pulling it out, keeping a sufficient pressure on the forceps to maintain the hold on the testicle. Now go back after the top one, which can easily be gotten hold of, twist it as before and pull it out. In taking hold of the testicles be very careful not to get hold of a main artery which lies right between the two testicles, for if the artery is ruptured there is no hope for the chick. Pick it at once and treat yourself to a broiler.

If the first incision should not be high enough and turning the knife you cut up toward the back bone, be careful not to hold the knife in such a way that the point cuts away up ahead, for in this way you may cut another organ that will cause a lot of blood to flow and bother you, though it may not prove fatal to the bird. Hold the edge of the knife straight up and down. After removing the spreaders and releasing the bird, the object in pulling the skin away back before making the incision will be seen, for

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when the hird takes his natural position, the hole through the skin will go forward so that the hole through the flesh will he covered. Birds which have been caponized will remain rather inactive for a few days and some of them may puff up with wind under the skin, but this will pass off as a rule in a day or so. If, however, any seem greatly distressed, make a little slit low down on the leg, so that if there is any pus in it, it will run out and the wind may all be pressed out very easily.

When the operation is finished, place the bird in a clean coop and give water and a little soft food. When the wound is healed, the real fattening process may be begun. This consists of feeding soft mashes, and as much milk as possible.

In the South Shore roaster colony below Boston, where more money is made with market poultry than anywhere else in the country, a cross of Barred or White Plymouth Rock on Light Brahma is the favorite cross for capons. The chicks are hatched in August or September and are sold in middle or late spring when they weigh from seven to fourteen pounds. In other places they are usually hatched in the spring and marketed the following February.

NATIONAL EGG LAYING CONTEST

(September Report National Egg Laying Contest at Mountain Grove, Missouri.)

By T. W. Noland, Director

THE hens all made a good average for the month, the total number being only 62 eggs less than last month's record, with only 30 days in the month. Many of the hens have passed the 200 mark, some having completed the moult and back on the job again, while others have not yet moulted and probably will not before the close of the contest.

The Contest

Pen 27, Anconas, from Missouri, wins the cup for September with a record of 107 eggs. The total number of eggs laid in September was 3,706, or an average of 12.35 per hen.

Following are the leading pens for each breed:

Anconas, Missouri, 107 eggs; Buff Wyandottes, Missouri, 102; Silver Wyandottes, Iowa, 101; Barred Rocks, Missouri, 100; S. C. White Leghorns, Missouri, 93; White Wyandottes, Missouri, 90; White Plymouth Rocks, Idaho. 87; Black Orpingtons, Missouri, 82; S. C. Reds, Missouri, 81; R. I. Whites, New Jersey, 81; R. I. Whites, Michigan, 81; R. C. Reds, Missouri, 75; Buff Rocks, Missouri, 75; White Orpingtons, Missouri, 57; Buff Orpingtons, Missouri, 55; S. C. Brown Leghorns, Missouri, 45.

REQUISITIONING FOOD IN GERMANY

Through information secured by the United States food administration, it is now possible to describe with reasonable accuracy the extent to which German farmers, and those in other countries, are maintaining production and their attitude toward government regulations.

There is abundant evidence of rigid official supervision which to the American mind would seem intolerable. For instance, the Bavarian state office has adopted severe measures to maintain the milk supply even to the extent of taking farmers' churns and butter casks from them to prevent butter making on farms. As a result, milk deliveries in some districts have increased tenfold and are now practically as large as in peace times, though of course at the expense of butter production.

Accustomed to Requisitioning

Naturally this was not accomplished without some friction, but considering the great number of food regulations affecting producers, of which this instance is typical, opposition has been surprisingly small.

Little Evidence of Hoarding

This system has sometimes resulted, as for instance in Russia, in peasants withholding and hiding for their own use large quantities of their produce. But among the central powers the farmers to a large degree have come forward willingly and have given up their produce without hesitation. In one district in Bulgaria, following an extensive campaign in which food needs were pointed out, as much as 440,000 pounds of wheat and 44,000 pounds of corn were received in one day as voluntary contributions. The population as a whole has given its surplus stocks willingly and the requisition system has had most satisfactory results. Requisitioning thus amounts to a system of comprehensive purchasing to meet government needs, rather than an indication of hoarding or resistance by farmers to their government.

NIETZCHE'S VIEW OF CHRISTIANITY

Frederich Wilheim Nietzche was one of the most noted of modern German philosophers. How much has his philosophy affected the views and character of the Germans of today? Is not the answer written in the blood of the women and children, the old men of occupied France and Belgium? Are not the Lusitania victims witnesses to German adoption of Nietzche's faith?

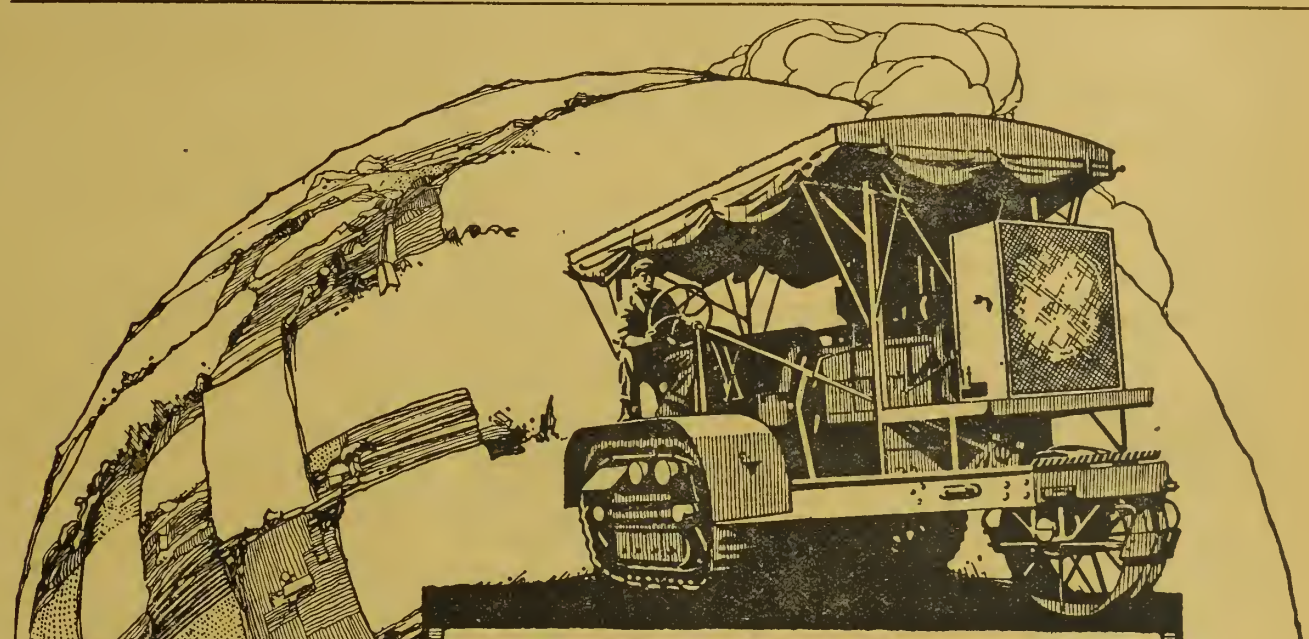
Here is his indictment of Christianity:

"With this I conclude, and pronounce my sentence: I condemn Christianity. To me it is the greatest of all imaginable corruptions. The church is the great parasite; with its anemic idea of holiness it drains life of all its strength, its love, and its hope. The other world is the motive for the denial of every reality. I call Christianity the one great curse, the one great intrinsic depravity, the one great instinct of revenge, for which no expedient is sufficiently poisonous, secret, underhand, to gain its ends. I call it the one immortal shame and blemish upon the human race."

ENTOMOLOGISTS IN "COOTIE" FIGHT

Scientists of the Bureau of Entomology, United States Department of Agriculture, are conducting extensive work designed to find a preventive or exterminator for body lice, the "cooties" of the war zone. They are working to add to the knowledge of how to repel, kill, or drive away the tiny parasite on which world-wide attention was centered by the war. The scientists, in addition to watching "cooties" as they pass through the stages of their existence, are testing chemicals to learn their destructive action on lice, their effect on human bodies, and their penetration of clothing. Also, they are cooperating with army officers in testing laundering and delousing processes.

"Some folks run the milk of human kindness through a cream separator before they hand it out."—Hoard's Dairyman.



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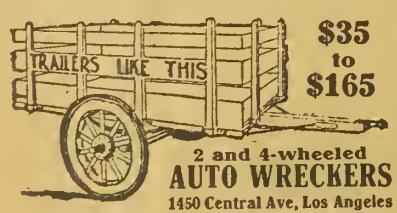

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Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Unsigned communications receive no attention.

Sheep Coughing

Please prescribe for sheep that are coughing and running at the nose.—Subscriber, Ager.

The coughing and running at the nose might be due to any one of several different causes and not knowing just what is wrong it may be best to prescribe a general tonic. Sheep often need something to arouse a healthy action of the liver and often of their own accord will ravenously eat something bitter, as dried boneset, if they can get it. Give the following that will be a laxative and liver tonic. Raw linseed oil, two parts; turpentine, two quarts; powdered nux vomica, two ounces, and aloin, four ounces. Mix thoroughly and give each sheep a tablespoon of the mixture. In a few days repeat the dose. The gallon will be enough for about 60 sheep, so you can govern the amount you get by the number of sheep you have. Keep the medicine well shaken while dividing the doses. You will be obliged to give it as a drench. They might eat it if sprinkled on some dry hay, but some would eat more than others and get more than they should have.

A Good Watch Dog

I have a fine collie dog that has been castrated. He is too playful and seems to have no pep. How can I make a good watch dog of him?—Subscriber, Corcoran.

There is only one way to make a good watch dog and that is to keep him tied up most of the time and do not play with him. He will soon become cross enough and watchful too. Build a kennel for him to sleep in and tie him to a stake just outside with a chain long enough to allow him plenty of freedom when inside. Use a strap for a collar that is not small enough to choke him nor large enough to slip over his head. If he is not full grown watch the collar to see that it does not get too tight. There should be a swivel in the chain so it will not get twisted and choke him. He must be turned loose for a short time once or twice a day for exercise. Or you might plant a post about eight feet high near the kennel and another 30 or 40 feet away and stretch a wire between them with a ring on it. Tie the dog's chain in the ring, then he can run back and forth between the posts. That will give him plenty of exercise and keep him in good health.

Lymphangitis

There seems to be something wrong with one of the hind legs of my horse. When he is tied up in the stable the leg swells from the first joint up to the second, and when he is worked or turned in pasture the swelling goes away and the leg becomes its natural size.—Subscriber, Vacaville.

The trouble is with the lymphatic vessels. They are not carrying off the waste material unless stimulated by exercise. This usually comes from overfeeding. Do not feed too much bulky feed and allow him to run out most of the time. Give him a tablespoon of nitrate of potash in the feed twice a day for a week; also get four ounces of the tincture of aconite and give half a teaspoon of it in the drinking water twice a day while it lasts. If given in the right amounts it will last about a month. If the swelling persists in returning then use the following lotion every night as a liniment and rub it in well. Make the lotion of one ounce of chloride of zinc to the gallon of water.

A TREMENDOUS EVENT

The famous 6000-acre Tagus Ranch in Tulare County is going to be made available to renters in tracts of 20 acres and up after December 15. The announcement has already created a sensation throughout the central part of the state, as this ranch is one of the greatest agricultural factors in the West. The property is owned by the Pacific States Corporation, Los Angeles, who are now receiving applications for leases on acreage in Tagus Ranch. The leases will be awarded only to responsible successful parties, and the special qualifications of each applicant will be carefully considered. The great breeding herds and equipment of Tagus Ranch will be disposed of through the medium of an auction sale, which will be by far the biggest event of its kind ever held west of Chicago. The sale will include 400 grade Angus and Shorthorn cows, 15 registered Angus bulls, 3 Shorthorn bulls, 200 registered Duroc-Jersey hogs, 90 registered Holstein cattle, 39 registered Percheron and Belgian stallions and mares, five 15-35 horsepower Sandusky tractors, 250 head high class brood mares and work stock, and over $50,000 worth of plows, harrows, wagons, hay equipment, cultivators, wagons, etc., including a large number of special bean and beet machinery and implements. The sale will be held on the Tagus Ranch December 10-11-12-13, and will be under the personal management of C. L. Hughes, Sacramento, with Col. Ben A. Rhoades, Los Angeles, as auctioneer.

SWIFT BUT NOT FUSSY

"My stenographer can write one hundred and twenty words a minute."

"So can mine, but she doesn't seem to care what words she writes."

The ECLIPSE for $1.65 a year

That is the cost per year, figured on a basis of 38 years of service. Eclipse Windmills erected 38 years ago are still pumping water *today—with no repair bills!*

The Eclipse Wood Windmill has been used for 50 years, always giving wonderful service. Its strong, simple construction makes it the one mill to buy.

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SAN DIMAS, CALIFORNIA

Household Department

FOURTH LIBERTY LOAN

What Is the Liberty Loan?

It's forts and it's ships and it's shining guns.
It's squadrons that sweep the sea.
It's all of the circling band of steel
That shall keep all the home shores free.
It's grub and it's warmth for the sailor lad
Far out on the wintry foam.
For the brave jack tar, as he fights afar,
It's the good old "Money from home."

What Is the Liberty Loan?

It's rifle and helm and it's bayonet,
It's shovel and shard and shell
For the soldier boy in the olive drab,
Out there on the edge of hell.
It's the roaring wings of the whirring planes
That battle on high alone.
For the lad who is daring "Over There"
It's the good old "Money from home."

What Is the Liberty Loan?

It's succor and life for a bleeding world.
It's the glimmer of Peace at dawn.
It's the strength of a mighty arm to strike.
It's the gleam of a great sword, drawn
But, more than all, it's the pledge of love
To the lads whom we call "Our own."
To the boys on land, afloat, on high,
It's the good old "Money from home."

—By Ralph E. McMillin.

CORPORAL HENRY JOHNSON'S STORY

By Himself

CORPORAL Henry Johnson himself, who is convalescing at a near-by base hospital, rather unexpectedly dropped in at the Field Headquarters of the Press Section here and very willingly gave a vivid and awesome story of the event. I am going to try to offer it to you as I heard it. Quite contrary to the well known newspaper phrase, "told his story blushing and stammering as a schoolgirl," Johnson gave a rapid and vivid story, inserting all gestures of the fray.

"Yessah, ma name's Johnson. Dis is Johnson, what's left of 'im.

"Yah must a read all about Johnson and Robinson, shue yau did, it was in all de papers.

"Dere's a silver plate right dere (pointing to his left foot), yessir, right dere, they pushed a baynet through ma laig an' shot me in de right arm. Day want to send me home but Ah ain't goin' home. Ah gonna stay here till may company goes home. I'm a good a man as any of 'em. Dose Germans can't fight.

"'Twas a cloudy an rainy night and me and ma pardner was at this here outpost. Bout two in da mornin' we sees a bunch a Germans comin' at us. Ah figured maself as good a man as any of em an Ah says to ma pardner, 'We's going to stick right here.' He says, 'I'm with yah to de end.' So stead of 'treating to lines we cut loose grenades and fired way all our ammunishion. Robinson was wounded in da laig at de start and fell to de ground still throwing de grenades at de Huns. Two of 'em tried to carry way ma pardner on a stretcher. Ah took ma rifle, a French gun, just like dis, and hit a Dude right on de haid and broke the rifle right here.

"Ah went after de Dudes carryin' way ma pardner. Ah reached for ma bowie (trench knife), and hit one feller right in de haid. I pulled it out and bout faced all round and give it to nudder in the guts.

"I took my pardner way from 'em and brought 'em back to de post. Den one of de Dudes comes at ma hollering 'Kumrad.' Kumrad, you say, I'm Kumrad all right. Ah'll show you Kumrad. Yessah. and den de Germans, what was lef of em, beat it. I bandaged ma pardner with mah first-aid kit.

"Den de lootenant comes runnin' in an says, 'Johnson, what's happened?'

"I says, 'It's all over, lootenant.'

"Ah had sixteen automatics and mo stuff piled in front of ma.

"I says, 'Go out dere an count dose Dudes.'

"The lootenant takes his pocket light an' looks over the ground and comes back.

"'For heaven's sake, Johnson, there's twenty-four of 'em!'

"'Yessah, and if dey hadn't a got ma pardner here, dey would a been a lot mo.

"The lootenant says, 'Johnson, are you hurt?'

"Ah says, 'No, sah.'

"'Yes, you is,' he says, 'look, youse all bloody.'

"Oh, I says, dat's from de Dudes.

"Yessah, I figured maself as good a man as any of dem and if dey hadn't got ma pardner we'd a cleaned up."

At this point one of the listeners inquired:

"Johnson, where are you from?"

"I'm from Albany, sah."

"I'm from Albany, too," was the reply.

"Yah ought to know me. I'm Henry Johnson, the boy who used to drive a horse for Hartman's on ——— street."

This ended the dramatic offering and Mr. Johnson was warmly congratulated by his attentive audience.

Daily as Corporal Johnson strolls the streets of the village on his convalescent limp he is stopped by both French and Americans who congratulate him and inquire as to his heroic deed. He is becoming a popular character about the place and many await the appearance of his partner, Robinson, to see the pair which scored such an extraordinary win against heavy German odds.—Hutchinson News.

IT ALWAYS WORKS

She was a dear old soul, and for a long time she stood in pouring rain watching Private Murphy on sentry duty. At last she approached him and, in a voice full of sympathy, said:

"My poor man, how do you manage to keep dry in this awful wet weather? Don't they give you an umbrella to keep the rain off?"

Private Murphy looked her up and down for a moment, then replied: "No, mum, they don't. Shure, Oi just ate a salt herrin' in the mornin' before Oi come out, an' that keeps me dry all day."

HISTORY MEDLEY

Reviewing some examination papers which she had received from a class in American history the other day, a teacher in one of the Philadelphia public schools was surprised to read the following answer to the question, "What was the Magna Charta?"

"Magna Charta," the pupil wrote, "was the wife of a soldier in the Revolutionary War. Her husband got shot one day, and Mrs. Charta picked up his cannon, saying, 'Shoot if you must this old gray head, but I'm going to fight it out on this line if it takes all summer!'"

Be a pioneer and store home-grown food as if no freight trains were running or grocery stores open.

This international food sharing is just looking after "my folks," "your folks" and "our folks."

"If U fast U beat U boats;
If U feast U boats beat U."
—English Placard.

The past can never be undone. The food you should have conserved will never reach a hungry mouth.

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The U. S. Government must have metal for *ships,* munitions, guns. Help win the war by helping to

save iron and steel—don't buy a new range

now unless you must. Put the old range in good repair, and get along with it another year. If you can't, then buy a Majestic—the range that saves fuel because it is heat-tight, saves food because it bakes right, saves repairs because it is built of *unbreakable malleable iron and rust-resisting charcoal iron.*

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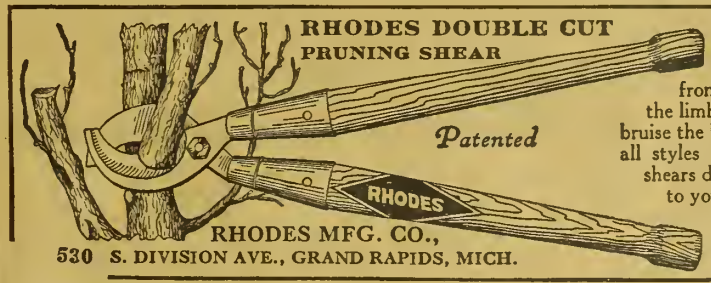

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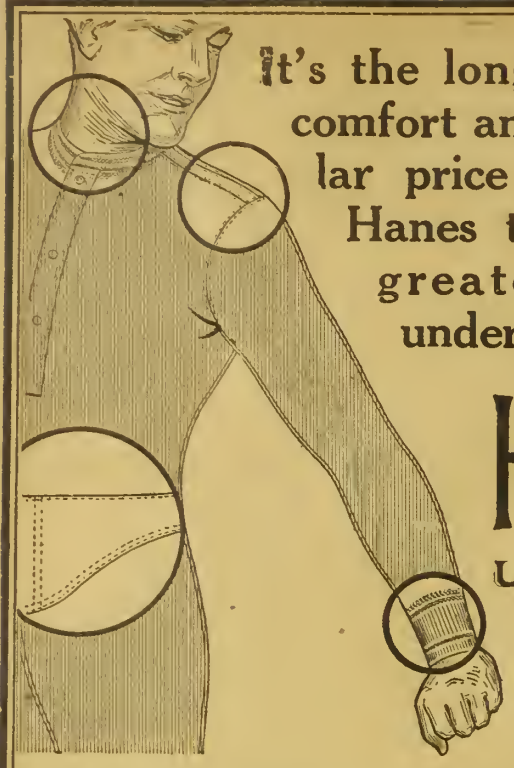

It's the long wear, the comfort and the popular price that make Hanes the Nation's greatest winter underwear.

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UNDERWEAR

GUARANTEE
We guarantee Hanes Underwear absolutely—every thread, stitch and button. We guarantee to return your money or give you a new garment if any seam breaks.

HANES quality, workmanship and comfort-fit in Heavy Winter Weight Shirts and Drawers and in Union Suits give unusual underwear value at a popular price! Read these wear and comfort features closely:

Guaranteed unbreakable seams; tailored collarette that snugs up to the neck, preventing gaps; shape-holding elastic shoulders that "give and take"; pearl buttons sewed on to stay! *Every desirable feature!*

Illustrated above are Hanes Heavy Winter Weight Shirts and Drawers, the Nation's standard at popular prices. Note the snug-fitting, three-button, staunch sateen waistband. Hanes Union Suits are also unusual in value, fit and comfort. *The closed crotch stays closed.*

Hanes for the boys! Hanes Winter Weight Union Suits for boys are the very limit of value—material, workmanship, warmth! They are the men's suits in boys' sizes. *Such value has never before been put into a boy's union suit!* You'll realize that as quick as you see one!

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Oil consumed only when heat is needed—no waste.

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STANDARD OIL COMPANY (California)

PERFECTION OIL HEATER

Food

SWEET POTATO FLOUR

Sweet potato flour, made in the home by using an ordinary coffee grinder or a meat grinder, offers one practical way to save sweet potatoes from spoiling, according to food specialists of the United States department of agriculture. A quart of dried potatoes will make a cup of the flour, or meal, which is useful in making certain hot breads, cakes and puddings.

To make the flour the potatoes should be cut into small lengthwise pieces and thoroughly dried either in a drier that fits on the top of an oven or warming closet or spread on racks in a current of air from an electric fan. The thoroughly dried potatoes are passed once or twice through a coffee grinder or the nut knife of a food chopper and the product sifted. The flour looks much like fine corn meal, and keeps for some time in a tight container.

In a stove drier potatoes have been dried out satisfactorily in one and one-half days, the drier being over a gas stove used at intervals during the day and unlighted at night. In a warming oven potatoes dry in about two and one-half days, but are of darker color.

How to Use the Flour

In cake or bread making the sweet potato flour may take the place of one-half of the flour usually used. In cakes sugar can be reduced a little. As a thickening agent it has the same power as cornstarch.

The recipes which follow have been tested by specialists of the United States department of agriculture and found to be excellent.

Sweet Potato Flour Waffles

One cup sweet potato flour, one cup white flour, 1½ teaspoons salt, 1¾ cups milk, one egg, one tablespoon melted shortening, four teaspoons baking powder.

Separate the egg. Beat the yolk and add the milk, melted shortening and dry ingredients. Then fold in the egg white beaten very light. Bake on hot, well-greased waffle irons until golden brown. Serve at once with butter and syrup. This will fill a waffle iron (for four waffles) six times.

Baking Powder Biscuits

One-half cup sweet potato flour, one-half cup white flour, two teaspoons baking powder, one-half teaspoon salt, two tablespoons shortening, one-half cup milk.

Sift the first four ingredients, rub in shortening with tips of fingers. Make a well in center and mix in slowly the liquid until a soft dough is formed. Toss on a floured board and roll to the thickness of one-half an inch. Cut and bake in a quick oven 20 or 25 minutes.

Cookies

One-third cup shortening, three-fourths cup sugar, one-fourth cup milk, 1½ cups white flour, one-half cup sweet potato meal, two teaspoons baking powder, one-half teaspoon salt, one egg, one-half teaspoon vanilla.

Cream shortening, add sugar and cream into the shortening. Add beaten egg, then the milk, and lastly the dry ingredients. Roll, cut and bake. For drop cookies use equal parts of sweet potato meal and white flour, making one cup of each.

One Egg Cakes

One-fourth cup shortening, one-half cup sugar, one egg, three-fourths cup milk, three-fourths cup white flour, three-fourths cup sweet potato flour, one-fourth teaspoon salt, three teaspoons baking powder.

Cream shortening, add sugar and well-beaten egg. Mix and sift flour and baking powder and add alternately to first mixture with the milk. Bake in greased muffin tins 30 minutes. Makes ten cakes.

Frozen Pudding

Use above recipe, adding one-fourth teaspoon vanilla, one-half tablespoon sugar and pinch of salt. Freeze.

The plain cream without the chocolate made with less flour to make a thinner cream is good served with sliced fruit, such as bananas, or as a custard with fruit gelatine pudding.

HOW TO COOK BRINED VEGETABLES

Stuffed Green Tomatoes

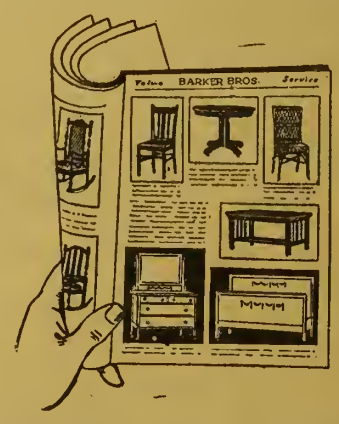
Soak salted green tomatoes for two hours. Remove a thin slice from the top of each, take out the seeds, and fill the cavity with a mixture of boiled rice, well seasoned with onion, paprika, and ground peanuts. Place the tomatoes in a baking dish, and add sufficient stock to almost cover them. Cover the dish, and bake it slowly until the tomatoes are tender, about one hour.

Stuffed Green Peppers

Soak the peppers for two hours. Boil until tender and stuff with the mixture used for tomatoes. Cover the top with buttered crumbs. Bake for 30 minutes. Any kind of left over meat may be used instead of peanuts.

Ripe Tomato Salad

Use tomatoes that have been pre-



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served in salt and vinegar solution. Soak them for 30 minutes. Peel them, and remove the stem ends and the seeds. Fill the cavities with minced green pepper that has been preserved in salt and vinegar solution and rinsed but not soaked, with celery moistened with salad dressing. Place a spoonful of the dressing on top, and serve the tomatoes on lettuce or finely sliced cabbage.

Green Tomato Pie

Two cups salted green tomatoes, two-thirds cup syrup, two tablespoons cornstarch, two tablespoons butter, one teaspoon grated lemon rind, two teaspoons lemon juice or vinegar.

Soak the tomatoes for two hours, cut them in small pieces, and cook until tender. Add the other ingredients, and cook the mixture until it is thick and clear. It may be used for a two-crust pie, or it may be placed in a lower crust and covered with a meringue.

Mock Mincemeat

Three pounds salted green tomatoes, two pounds apples, one cup chopped suet, two cups molasses, one cup corn syrup, one pound raisins, one cup vinegar, one teaspoon cloves, two tablespoons cinnamon, one teaspoon allspice, one teaspoon nutmeg.

Soak the tomatoes for two hours, and chop them fine. Chop the apples. Add the other ingredients, and cook the mixture until it is thick. This mincemeat will keep for some time in a covered jar.

Green Tomato Conserve

One pint salted green tomatoes, one tart apple, diced, not pared, two cups syrup, juice of one lemon, grated rind of one-half lemon.

Soak the tomatoes for two hours, and dice them. Cook the tomato and the apple in a small amount of water until they are tender. Do not drain them. Add the other ingredients, and cook the mixture until it is thick and clear. If desired, about one tablespoon of preserved ginger may be added.

THE GREATEST WOMAN

Who is the greatest woman in all history?

One hundred and fifty school teachers recently answered the question, and with enthusiasm and unanimity the judges awarded the prize to the one who made this reply:

"The wife of a farmer of moderate means, who does her own cooking, washing, ironing, sewing, brings up a family of boys and girls to be useful members of society, and has time for intellectual improvement."

CERTAINLY KNOT

Tenderfoot—Why do they use knots on the ocean instead of miles?

Second Class Scout—Well, you see, they couldn't have the ocean tide without knots.

—Boy's Life.

WEIGHT VS. SPEED

A man left his umbrella in the stand in a hotel with a card bearing the following inscription attached to it: "This umbrella belongs to a man who can deal a blow of 250 pounds. Will return in ten minutes."

On returning for his property he found in its place a card inscribed: "This card was left here by a man who can run one mile in four minutes. I shall not be back."

PARTED COMPANY

"Yes," said the stout man. "I went into that deal with $10,000."

"How did you come out?"

"Alone."

a Message to Housewives

—to the women of the Pacific Coast who wish to save fuel, save labor, save clothes and save money.

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Ask your dealer to include a few bars with your next order.

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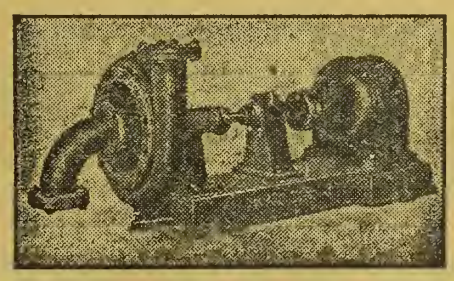

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IT MAKES THEM FAT
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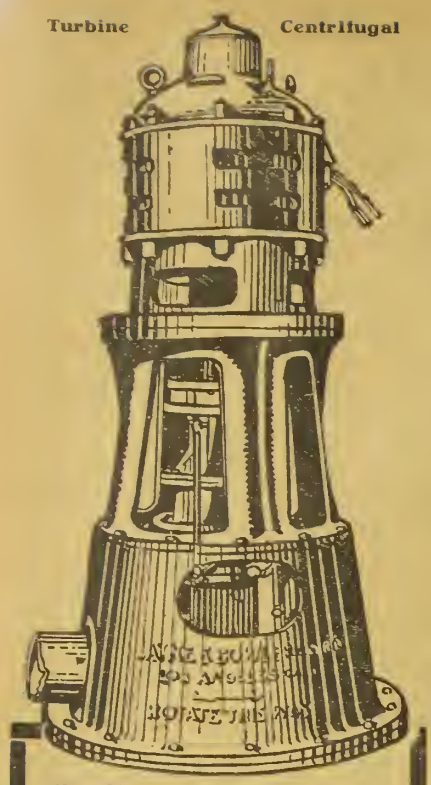

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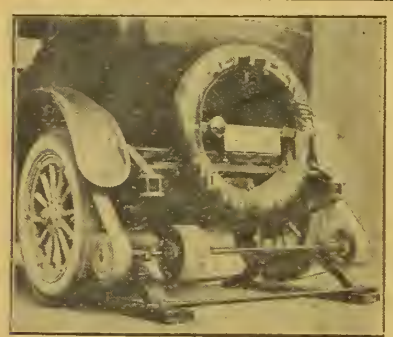

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100,000 feet New and Second-hand Pipe and Casing.

Pipe—½, ¾, 1, 1½, 2, 2½, 3, 3½, 4, 4½, 5, 6, 7, 8, 9, 10, 11, 12, 15 inch.

Casing—3, 3¼, 3½, 4, 4¼, 4½, 5, 5½, 6, 8, 10, 11, 12, 14 inch; 2000 feet 6⅝-inch 20-lb. ten-thread.

Riveted Pipe—4, 6, 8, 10, 12, 14, 16, 18 Inch.

All above pipe and casing is practically as good as new, with good threads and couplings on each joint. We also carry valves and fittings, pumps, engines, boilers and rail. See our stock and get prices before buying elsewhere.

ADAMS PIPE WORKS

Bay and Mateo Sts., Los Angeles, Cal.
Phones: F 1917; Bdwy. 1264.

MACHINERY
OF EVERY DESCRIPTION
BOUGHT and SOLD
BUTTRESS & McCLELLAN
205-7 N. Los Angeles St. A-5473 Bdy. 8098

When writing advertisers, mention the Cultivator.

Los Angeles Market

Los Angeles, October 16, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.

Cal. Extra Creamery 60

Oct.	9	10	11	12	14	15
'18 ...	60	60	..	..	..	60

Rcts. wk. ending Oct. 15, 267,700 lbs.

CHEESE

Brokers' prices:
California fresh, lb. 29

EGGS

Exchange quotations. Price to retailers 2 to 3 cents higher.
Fresh extras 67
Case Count 60
Pullets 56

Dairy Exchange prices past week on fresh extras.

Oct.	9	10	11	12	14	15
'18 ...	61	63	..	..	..	67

Rcts. wk. ending Oct. 15, 873 cases.

POULTRY

We quote to producers.
Broilers .....35@39
Fryers 32
Hens, small, 24; heavy .....26@29
Colored 30
Ducks, lb., 20; ducklings .....22@26
Roasters 30
Roosters, old 20
Turkeys .....29@32
Geese 15
Belgian Hares 19
Squabs .....30@35

LIVESTOCK

We quote cwt. f. o. b. L. A.
Corrected Wednesday morning, October 16, by the Cudahy Company.
Cattle—
Beef steers, av. 1000-1100 lbs.....12.00
Heifers, good 9.00
Cows, good 8.50
Veal Calves 10.00
Canners .....5.00@6.00
Hogs—
Av. 150 lbs. 17.00
Av. 175-225 lbs. 18.00
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers 11.50
Ewes 10.50
Lambs 15.50
Yearlings .....11.50@12.00

POTATOES

Wholesale selling prides:
Burbanks .....2.25@2.50
Sweet, lug .....75@85
Idaho Russet .....2.40@2.50

ONIONS

Wholesale selling price, cwt.
Australian Brown, lug .....1.50@1.65
Silverskin, lug 1.75
White Globe, lug .....75@90

VEGETABLES

Wholesale prices:
Beans—String .....4½@5
Limas, lb. .....4@5
Cabbage, cr. .....2.50@3.00
Carrots, doz. 40
Cauliflower, doz. .....2.00@2.25
Celery, cr. 3.25
Corn, lug .....65@75
Cucumbers, lug 65
Egg Plant, lb. 3
Horseradish, lb. 15
Lettuce, cr., ...75@85
Peppers, Chili, lug 50; Bell, lug.....50
Tomatoes, lug .....50@85
Turnips, doz. 40

FRUITS

Wholesale prices:
Apples—King David .....1.50@2.25
Bellefleurs, bx. .....1.15@1.70
Newton Pippins 2.25
Jonathans .....1.50@2.25
Cranberries, lb. 12
Figs, lb. .....3@5
Grapes — Homegrown, best per pound, Muscats, 5@6; Tokays, 5@6; Cornichons, 5@5½.
Melons — White Rinds, cabbage cr., 3.00; Casabas, 3.00@3.25; Watermelons, lb., ½@1.
Peaches — Salways, 1.50@1.75 lug bx.; Northern Salways, fancy, 1.50; Phillips Cling, fancy, large size, 1.50@1.75 lug box.
Pears—Bartletts, bx. 2 75
Quinces, lug .....80@90

CITRUS

Lemons, packed, 5.00; loose ....3.00@3.50
Oranges — Valencias .....8.50@10.00
Grapefruit .....4.50@6.00

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....18@20
Amber extracted 16
Fancy white comb, per case.....6.50
Comb Lt., amber, per case .....5.00@6.00
Beeswax, lb. .....32@34

BEANS

Price to retailers, cwt.:
Lady Washington 11.00
Navy 11.00
Pinks 8.00
Tepary 7.75
Red Mex. 8.75
Lima 12.50
Blackeyes 7.00
Garbanzos 10.75
Soy 7.75
Lentils 20.75
Kidney 11.75
Henderson Bush Lima 10.50

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:
No. 1 Tame Oat .....26.00@28.00
No. 2 Tame Oat .....23.00@25.00
No. 1 Barley .....22.00@24.00
No. 2 Barley .....19.00@21.00
No. 1 Alfalfa .....20.000@22.00
No. 2 Alfalfa .....17.00@19.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS
See San Francisco market.

San Francisco Markets

San Francisco, October 15, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapped, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:
Extras 62½
Prime firsts 61
Rcts. wk. ending October 14, 74,600 lbs.

CHEESE

Dairy Exchange quotations:
Cal. Flats .....27@30
Cheddar 30½
Jack Cheese, full cream 28

EGGS

Dairy Exchange quotations:
Extras 72½
Selected Pullets 62
Rcts. wk. ending Oct. 14, 3313 cases.

POULTRY

We quote to producers, lb.:
Per lb.: Large hens, 31@33; Leghorn hens, 28@31; broilers and fryers, ¾ to 1½ lbs., 45; 1½ to 2 lbs., 34@35; 2 lbs. and over 32@33; old roosters, 22@23.
Belgian hares, live, 17@18.
Squabs, doz., 4.00@5.00.
Turkeys, dressed, 30@32.

LIVESTOCK

Prices gross weight:
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.
Steers, lb., 10@12; thin, 8@9; cows and heifers, 6½@8; thin, 4@5; calves, 6@11.
Sheep—Lb. gross weight: Wethers, 11½@12; ewes, 9@9½; lambs, yearlings, 12@12½; milk, 14@14½
Hogs—Hard grain fed, weighing 100 to 140 lbs., 17¼; 140 to 300 lbs., 17¾; 300 to 400 lbs., 17¼.

POTATOES

Wholesale selling prices at wharf, cwt.:
River, new, cwt. .....1.75@2.20
Sweets, lb. .....3@3½

ONIONS

Wholesale selling price on wharf, cwt.:
Australian, Brown and Yellow....90@1.00
Garlic, new, lb. .....12½@15

VEGETABLES

Wholesale selling price:
Artichokes, doz. .....40@75
Beans, String, lb. .....4@6½
Limas, lb. .....6@8
Celery, doz. .....40@50
Cucumbers, lug .....1.00@1.15
Pickling, lb. .....3@4½
Onions, green, bx. .....65@75
Peas, lb. .....12@14
Peppers, Bell, lug .....75@1.00
Squash—Summer, lug. .....35@60
Cream, 75@85; Hubbard, sk...1.00@1.25
Tomatoes, lug .....1.00@1.50
Pumpkins, sk. .....1.00@1.25

FRESH FRUITS

Apples—Jonathan .....1.50@2.50
Bellefleur .....1.50@2.00
Jonathan .....1.50@3.00
Newton Pippins .....1.40@2.00
Spitzenberg .....1.75@2.50
Bananas, lb. .....7@7½
Berries—Ch.: Strawberries, 9.00@11.00; raspberries, 8.00@10.00; blackberries, 9.00@10.00; huckleberries, lb., 10@15.
Figs, single .....50@75
Grapes—Lug, 1.25@1.75; Muscat, 2.00@2.50.
Melons — Persian, 1.25@1.75; casabas, 1.00@1.25; watermelons, 1¼@1½ lb.
Nectarines, cr. .....50@1.00
Olives, lb. .....10@12½
Peaches, bx. .....1.00@1.50
Pears, Bartlett, wrapped bx.....2.50@4.50
Beurre Hardy, lug .....1.40@1.50
Persimmons, bx. .....1.00@1.50
Pomegranates, ½ orange bx.....1.25@1.50
Pineapples, doz. .....4.50@5.00
Quinces, lug .....1.00@1.25

CITRUS

Lemons, bx., fy., 3.00@5.50; lemonettes, 2.50@4.00; oranges, 8.00@9.00; grapefruit, 6.50@7.00.

DRIED FRUITS

Raisins: Associated prices 1918 are:
Muscats: Packages seeded, fancy, 36-16s, 9.625; fancy, 48-12s, 7.75; choice, 36-16s, 9.125; choice, 48-12s, 7.375. Bulk seeded: 25-lb. Bakers, 8.00; 25-lb. fancy, 8.85.

Thompson Seedless; packages recleaned, 48-18s to case, 9.90; bulk, recleaned, 36-12s to case, 8.00; package, recleaned, 25-lb. boxes, 9.25. Sulphur bleached — northern stock: Bulk, 25-lb. boxes, choice, 10¼; bulk, 25-lb. boxes, fancy, 10¾; bulk, 25-lb. boxes, extra fancy, 11¼. Soda dipped — northern stock — Bulk, 25-lb. boxes, 10.

Loose: 1-crown, 25 lb. boxes, 8½; 2-crown, 25 lb. boxes, 7½; 3-crown, 25 lb. boxes, 8; 4-crown, 25 lb. boxes, 8¾.

Layers: 3-crown, 20 lb. boxes, 1.85; 3-crown, 20 1-lb. trays to box, 2.00; 4-crown, 20 lb. boxes, 2.10; 6-crown, 20 lb. boxes, 2.95; 3-crown, 10 lb. boxes, 1.05; 4-crown, 10 lb. boxes, 1.20; 6-crown, 10 lb. boxes, 1.65; 3-crown, 5 lb. boxes, .65; 4-crown, 5 lb. boxes, .70; 6-crown, 5 lb. boxes, 90.

Sun-Maid clusters, 20 1-lb. cartons to box, 2.35.

Imperials, 4 5-lb. cartons to box, 3.40.

Vineyard run, 50 lb. boxes, 3.90; 100 lb. boxes, 7.50.

Sultanas. Packages, recleaned, 48-16s to case, 9.65; bulk, recleaned, 25-lb. boxes, 9.00.

Peaches — California Peach Growers quotes opening prices for 1918 crop f. o. b. factories California. Prices guaranteed to December 31.

Bulk basis and boxes unfaced 1 and 2

SULPHUR

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards six times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

Try our new brand of VENTILATED Sublimed Sulphur, 100 per cent pure, for making Paste — (Atomic Sulphur) and for Dusting.

For Lime Sulphur Solution, use our DIAMOND S Brand Refined Flour Sulphur. We can furnish you this sulphur at such a low price that it will pay you to mix your own solution.

San Francisco Sulphur Co.
624 California St. San Francisco, Cal.

We are equipped to make immediate shipment. Send for illustrated booklet; price list and samples. Tel. Kearny 871.

GOAT MANURE

A Natural Fertilizer
Shipped in Bulk
Ground and Unground
Also
Ground in Sacks

This is in fine mechanical condition, and on account of its large Phosphoric and Potash content, is a very suitable fertilizer for this season of the year.

For particulars, write

Southern California Fertilizer Co.
602-610 Kerckhoff Bldg., N.E. cor. 6th and Main
Los Angeles

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS, MARCH 21, 1916.

of California Cultivator, published weekly at Los Angeles, Cal., for October 1, 1918.
State of California, County of Los Angeles, SS.

Before me, a Notary Public in and for the State and County aforesaid, personally appeared Frank H. Thomas, who, having been duly sworn according to law, deposes and says that he is the publisher and business manager of the California Cultivator and that the following is to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

NAME OF—	POST OFFICE ADDRESS.
Publisher, Cultivator Publishing Co.,	Los Angeles, Cal.
Editor, C. B. Messenger,	Los Angeles, Cal.
Managing Editor,	
Business Manager, Frank H. Thomas,	Los Angeles, Cal.

2. That the owners are (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding one per cent or more of the total amount of stock.)

Cultivator Publishing Co.
Frank H. Thomas, Los Angeles, Cal.
R. M. Teague, San Dimas, Cal.

3. That the known bondholders, mortgagees, and other security holders owning or holding one per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)

None.

4. That the paragraphs next above, giving names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holder appear upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is————. (This information is required from daily publications only.)

FRANK H. THOMAS, Manager.

Sworn to and subscribed before me this 4th day of October, 1918.
H. E. STORRS, Notary Public in and for Los Angeles County, California. (SEAL)
(My commission expires March 22, 1921.)

cents more.

	Practically Peeled	Yellows (Old style)	Muirs (Old style)
Standard	12⅞c	11¼c	11⅝c
Choice	13⅜c	11¾c	11⅞c
Fancy	14⅜c	12½c	12⅞c
Ex. Fancy	15½c	13¼c	14c
Slabs		10¼c	

Prunes and Apricots. The Prune and Apricot Growers Association have named following prices on apricots:

Standards	9½
Choice	13
Extra Choice	14½
Fancy	16
Extra Fancy	17½
Extra Moorparks	19
Slabs	11

Cash on delivery price on all grades will be 8 cents with the exception of standards and slabs on which it will be 6 cents.

Prunes: The government will take all the 50-60; 60-70; 70-80 sizes. The quotations sent to the trade last night are as follows:

The bulk prices will be:

Sizes:	Price per lb.
20-30	17
30-40	10¾
40-50	10
50-60	9
60-70	9
70-80	8¾
80-90	8¼
90-100	7¾
100-120	4¾
Above 120	4¼

One cent per pound, and one and one-fourth cents per pound will be added for 50 and 25-lb. boxes

NUTS

The Almond Growers' Association has established opening prices as follows per pound:

Nonp.	27½
I.X.L.	25½
Ne Plus	24½
Drake	20

Outside dealers have named prices above these quotations and it is understood association stock is practlcally closed out and prices withdrawn.

Walnuts: Net prices have been named by the California Walnut Growers Association:

No. 1 Softshell	28
No. 2 Softshell	25
Jumbo	30
Fancy Budded	31½
Golden Gate Budded	29

Franquettes, Eurekas and other fancy varieties sold on sample. No. 1 Softshell guaranteed 88 per cent good; Fancy Budded, 90 per cent. In case of worms or damage by ants not more than five per cent.

HOPS

Per lb., 10@11.

RICE

California Rice—1917 crop, nominal; 1918 crop, when harvested per 100 lbs.: Paddy rice, 4.32; clean fy. Japan, 7½ lb.; ch. Japan, 7 3-8 lb.; fy. second head, 6 7-8 lb.; screenings, 5 5-8; lb.; brewers, 5¼ lb.; rice polish, $50 ton, car lots; rice bran, $36 ton, car lots.

BEANS

Jobbers' prices, cwt., recleaned:

Limas	12.00@13.10
Bayous	7.50@7.75
Small Whites	Nominal
Large Whites	Nominal
Mexican Reds	7.50@7.90
Blackeyes	6.75@7.00
Pinks	7.40@7.50
Red Kidney	Nominal
Cranberry	Nominal
Teparies	7.00@7.50

HONEY

Jobbers' prices:

White extracted	20@22
Light amber extracted	17@20
Amber extracted	16
White comb, cs.	4.50@6.00
Light amber comb, cs.	3.50@4.00
Beeswax	32@34

HAY

Under date of October 11, Scott, Magner & Miller says:

Receipts past week only 553 tons. Most of the arrivals have been hay that has been out in the weather and is more or less damaged and it has had to be placed upon arrival at the best possible prices obtalnable.

Hay ex the warehouses is beginning to arrive in a small way, a few cars having been brought in to date and for this hay higher prices are being demanded and, when sold, obtained as storage charges for the season have accrued and must be obtalned in order to prevent losses. Therefore, our quotatlons are higher than heretofore.

There is some demand for fancy grades of Wheat Hay and Red Oat Hay, but Falr to No. 1 grades are not much sought for and the market on same is rather dull.

A new crop of alfalfa is fast coming on but whether we will have proper weather conditions for curing and balling this crop is a question that no one can answer at present.

Grass is of wonderful growth at present practlcally throughout the entire state. Volunteer barley in some sections is as thick on the ground as though it were sown and up as high as a foot and a half at the present time. Thls, of course, assures feed for some time.

Some damaged straw has arrived during the week but it is hard to dispose of. Good dry straw could probably be disposed of to advantage in a small way.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers charges of cartage, commission and handling expenses must be added according to conditlons.

Fancy Wheat Hay	
Fancy Wheat Hay (light 5 wire bale)	28.00@30.00
No 1 Wheat or Wheat and Oat Hay	26.00@28.00
No. 2 Wheat or Wheat and Oat Hay	22.00@24.00
Choice Tame Oat Hay	25.00@27.50
Other Tame Oat Hay	22.00@24.00
Wild Oat Hay	22.00@24.00
Barley Hay	22.00@24.00
Alfalfa	22.00@25.00
Stock Hay	18.00@21.00
No. 1 Barley Straw, bale	50@80
Damaged Hay (all kinds)	Nominal

SEEDS

Flax, lb.	8@8½
Hemp	Nominal
Millet	5@5½
Rape	2½@5

Citrus Fruit Market

Los Angeles, October 16, 1918.

With orange shipments practically ended the auctions are wildly grabbing every offering, some at almost fabulous prices. Every sales shows practically all figures above the $10.00 and $12.00 mark. The top price during the past week $18.60. There are not more than 60 or 75 cars left in California orchards, with perhaps a hundred or more in transit and on sidings. Practically all fruit will be cleaned up in orchard and packing house before the new year, November 1.

Lemons are likewise commanding high prices, but owing to large receipts of foreigns they are not as high as oranges.

Shipments

Shipments of citrus fruits to date since November 1, 1917: Southern California; oranges 14,171 cars, lemons 5767, total 19,938. To same date last season, oranges 39,495, lemons 7617, total 47,112. Central California this season; oranges 2536, lemons 115, total 2651. Last season to same date; oranges 4665, lemons 164, total 4829. Northern California; oranges 203, last year same date 485.

AT THE AUCTIONS

October 9

New York: 7 oranges, 2 lem. Val. 8.15-13.10, lem 2.60-7.25.

Pittsburg: 1 orange, 1 lem. Val. 8.70-10.00, lem. 2.80-5.65.

St. Louis: 1 Val. 9.40.

Boston: 2 oranges, 3 lem. Val. 7.80-11.85, lem. 3.45-5.15.

October 10

New York: 8 oranges, 3 lem. Val. 9.45-14.00, lem. 5.70-7.20.

Boston: 2 oranges, 2 lem. Val. 9.60-10.95, lem. 2.55-6.35.

October 11

New York: 5 oranges, 3 lem. Val. 9.95-13.20, lem. 4.25-6.25.

Philadelphia: 4 oranges, 1 lem. Val. 8.50-13.20, lem. 6.70-6.90.

St. Louis: 2 oranges. Val. 7.60-9.20.

Boston: 4 oranges, 1 lem. Val. 7.90-11.75.

October 14

New York: 10 oranges, 6 lem. Val. 11.40-15.85, lem. 6.30-8.45.

Boston: 5 oranges, 3 lem. Val. 8.05-11.20, lem. 4.00-5.35.

St. Louis: 1 lem. 5.80-7.00.

October 15

New York: 5 oranges, 7 lem.. Oranges 14.70-18.60, seedlings, 12.15, lemons 7.35-9.05.

Boston: 3 oranges, 2 lem. Val 7.95-11.55.

PARTIAL LIST CALIFORNIA FRUIT AND VEGETABLE SHIPMENTS

From post card reports to the Los Angeles branch of the bureau of markets, report is made of the following shipment of cars of produce from California for the week ending October 12; Apples, 161; cabbage, 4; cantaloupes, 1; carrots, 6; casabas, 10; cauliflower, 2; cucumbers, 1; dried apricots, 8; dried beans, 121; dried figs, 14; dried peaches, 10; dried pears, 6; dried peas, 1; dried prunes, 17; grapes, 1758; lettuce, 8; mixed fruit, 3; mixed vegetables, 19; mixed fruit and vegetables, 28; mixed dried fruit, 20; onions, 150; peaches, 2; pears, 61; peppers, 12; persimmons, 3; pomegranates, 6; potatoes, 284; quinces, 1; raisins, 101; sweet potatoes, 26; tomatoes, 163; watermelons, 5.

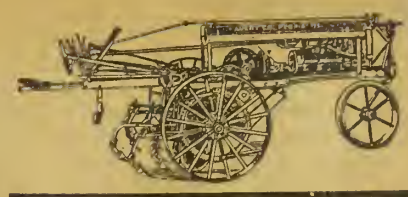
BRINE-SALTING OF FISH

All along the coast of the United States a small local business is carried on in pickling fish for use during the winter in the homes of fishermen and their neighbors. Among the species thus prepared are bluefish, squeteague or sea trout, channel bass, croakers, perch, sheepshead, Spanish mackerel, striped bass, black bass, hogfish, etc. There is no uniform method of pickling, the fish being dressed, salted and packed according to the fancies and convenience of the curers, and the product rarely goes on the general market. In general, the fish are dressed by removing the head and viscera, and are split down the back or sometimes the belly, so as to lie out flat. They are next washed and soaked until the blood is removed and then covered with salt and placed in barrels, first a sprinkling of salt and then a layer of fish, and so on until the barrel is filled. Then brine is poured in to fill the interstices and the barrel is headed and coopered.

WEATHER CONDITIONS

San Francisco, Cal., October 12, 1918.

Stations	RAINFALL Wk.	Season.	Norm.	Tem.p. Max.	Min.
Eureka	.00	2.17	2.31	62	48
Red Bluff	.00	7.85	1.28	84	52
Sacramento	.00	3.88	.69	84	50
San Francisco	.00	2.66	.63	84	54
San Jose	.00	6.44	.65	88	46
Fresno	.00	.59	.56	94	56
San Luis Obispo	.00	1.47	.73	98	52
Los Angeles	.00	.66	.22	98	60
San Diego	.05	.58	.22	76	62



The Avery Motor Cultivator

It is a two-row machine and cultivates 16 to 18 acres per day of any crop planted in rows—at a much lesser cost than you can do the work with horses.

The Avery Motor Cultivator is more than a cultivator. It can be used for hay loading, hay raking, harrowing or for belt work wherever power is needed.

Motorize Your Farm

Send us your name and address and we will send you a complete description of the Avery Cultivator and Avery Tractors.

Write and learn how to raise bigger crops for less money with less work.

F. H. Poss Company

California Distributors for Avery Farm Implements.

67-69 Beale St. San Francisco

When Writing Advertisers, Mention The Cultivator.

Arizona Certified Alfalfa Seed

Lot Sargent

I inspected the field from which this seed was harvested and certify the variety to be

Hairy Peruvian

I also personally sealed this package and sealed this certificate on same. Each seal contains my initials.

J. W. Longstreth

County Agricultural Agent

Yuma, Arizona

Make Sure of Your Peruvian Alfalfa Seed This Year

Buy A. & M. Certified

Every bag of Hairy or Smooth Peruvian which we sell has been officially inspected and bears originally signed tag. A facsimile of which appears in this ad.

Write for Seed Catalogue.

Remember our new location 620 South Spring Street

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I will judge you not by an allegiance expressed in mere words.

I will judge you not by your mad cheers as our boys march away to whatever fate may have in store for them.

I will judge you not by the warmth of the tears you shed over the lists of the dead and the injured that come to us from time to time.

I will judge you not by your uncovered head and solemn mien as our maimed in battle return to our shores for loving care.

But, as wise as I am just, I will judge you by the material aid you give to the fighting men who are facing death that you may live and move and have your being in a world made safe.

I warn you—don't talk patriotism over here, unless your money is talking victory Over There.

I am Public Opinion!

As I judge, all men stand or fall!

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California Cultivator

OCT 29 1918

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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THIS WEEK'S COVER

We recently had the pleasure of eating our first California grown banana. It was not even half bad. In years past we had a taste of alleged bananas grown in this state which, like some beefsteaks, were peculiarly resistant. But this last banana, grown in the open, in Hollywood on the outskirts of Los Angeles, had much the texture and flavor of the imported fruit. But the pineapple has yet to be grown in this state which has the luscious melting flesh of the Hawaiian pine, and we assume it will be many years before a pine will be developed in this state which will be a commercial factor, but the wonderful industry which has grown up in Hawaii is well worth the beautiful cover illustration and the interesting article by Mr. Dahl on fifth page.

PLANTING COVER CROPS

The early rains which covered many portions of the northern part of the state have given opportunity for the planting of green manure or cover crops, and many an orchard will be benefited by this season's planting. In many of the older orchards soil conditions have not been the best, and no better method of giving a bit of life to a soil can be found than the growing of a heavy green manure crop.

W. S. S.

The Liberty Loan drive is over; the war work council campaign is soon to be on; war savings stamps are with us always. This is merely a hint not to forget this necessary feature of the great ship building campaign. It is one in which the children of the nation have entered, but there is appeal to us all not to forget our pledges and to continue the purchasing of the war savings stamps. Every penny of that two billions is needed and California is falling behind.

SHOP EARLY

We haven't it in our heart to deprive the little folks of the pleasures of Christmas, but this is a year when we are all urging each other to refrain from the purchase of needless things in Christmas giving. There is usually an awful lot of junk disposed of under the name of holiday goods. This year that should be forgotten entirely. If any shopping whatever is done let it be at once when good judgment may be allowed to prevail in making purchases.

POSTPONED

The best laid plans of mice and men are put at naught these days of influenza. Just as we go to press a wire announces "California International Live Stock Show postponed. Will open November 16 and continue to and including November 24." San Franciscans are still planning for a great show and we hope they may use the intervening days to perfect it. Some of the live stock for this great exhibit is still in Los Angeles waiting for the Liberty Fair to open its gates. Orders of the health boards are absolute, but people are standing pat and hoping rigid adherence to rules will soon lift the quarantine.

BETTER DAIRYING

The University of California announces its course in market milk production which will be given at the University Farm at Davis, November 11-22. This is the first time such a course has been offered. It will be along most practical lines. Practice work will be given in judging and feeding dairy cows and in treating diseases of dairy cattle. There will be testing of milk and cream, separation and clarification of milk, pasteurizing, refrigeration, and especially sanitation will be taught. We trust particular emphasis will be given to judging and feeding, for of all the discouraging things the dairy farmer has to deal with we believe the boarder cow and the purchase of concentrates hold first place.

CONVERTING BONDS

The government has announced that the privilege of converting Liberty Loan fours into four and a quarters ends November 9. There are two advantages to be secured by the conversion; first, one-fourth of one per cent increase in interest; and second, it is almost certain that the fours will command a lower place on the market, so, if one should care to sell a greater discount would be necessary.

In converting from the old bonds to a new higher interest rate bond the original maturity and interest date will prevail; also all features in regard to taxation will remain exactly the same.

ANOTHER "NEW" WORM

Prof. Ralph E. Smith is investigating "the new worm in walnuts." It is a codling moth and operates very much as does the codling moth of the apple. It is operating in both Santa Barbara and Orange Counties, two large walnut producing centers. The worst of the trouble is that the pest may have entirely ruined the nut and yet outward appearances be perfect. The most fortunate thing in connection with the pest is that the walnut industry is well organized and is conducting a thorough investigation and is ready to follow leaders when it comes to making a fight for eradication.

SPRING GARDENING

Prof. J. W. Lloyd of the agricultural experiment station of the University of Illinois is supplying to Illinois gardeners a circular on fall preparation for spring gardens. He puts the emphasis on the word "now" in:

"Now is the time to make preparations for next year's garden. It is probable that vegetable gardens will play a more important part next year than ever before in contributing to the world's food supply. Every person who can possibly do so should plan to supply at least his own table with vegetables from his own garden. In order to be sure of having a good garden next year, it is wise to begin preparations this fall as above outlined."

If "now" is the time in Illinois it certainly is none too early in California. Spring is only a few weeks away, and the spading and working into the soil of fertilizers is needed to fit the soil for seedbed later.

The war is not over and the war garden is required as emphatically as ever.

LESS SUGAR

One of the war problems which makes an embarrassing situation for the people of nearly all countries is that of securing sugar. The shortage of sugar is one that will remain as long as the war lasts, in fact, longer, for it will obtain through a portion of the reconstruction period. There will be no sugar famine, for the situation is kept in hand by the food administration. When sufficient shipping is released from war activities Java and some other far away sugar producers may relieve the situation from vast stored stocks. Java alone has in excess of 500,000 tons of last year's crop, too far away to be moved. Closer at home, Cuba will produce during the present year an amount increased by 24.7 per cent over last year's production. This increase aggregates 254,000 tons. On the other hand, the United States will produce less than last year by 27.4 per cent, or a loss in this country of 227,000 tons. Porto Rico's production will show an increase of 110 per cent. While the percentage is great the aggregate is only 70,000 tons. On the other hand, the demand in the United States was never so great as at the present. Increased prosperity on the part of all laboring classes gives increased purchasing power, and sugar is feeling this demand to the extent that it must be controlled by the most rigid regulations.

In American production the prospect for 1918-19 is anything but rosy. There is shortage of labor everywhere, and this is being increased by demands of war industries and further inroads by the 18-45 draft regulations. The California producer will decline to face the labor situation with a crop as exacting as sugar when he can raise beans which will stand a degree of neglect and still produce a profitable crop.

One of California's factories stood idle during this season for want of beets. Every effort should be made to secure the operation of all of California's factories another year. The first consideration, however, will be that of labor and the possibilities of cheaper production.

This Week's War Notes

October's draft quota aggregates 350,000 men.

Foch is continuing to knock the junk out of junker and the mania out of Germania.

Six Eastern states report the epidemic of flu abated, while 27 other states report the disease still spreading.

American Red Cross supplies in Great Britain are sufficient to completely outfit 6000 Americans should that number be shipwrecked and all their supplies lost.

German submarines forced out of the harbors of Ostend and Zeebrugge cannot be accommodated in the harbor of Kiel and are now anchored offshore.

The Fourth Liberty Loan was greatly oversubscribed; to what extent is not yet announced because of the mass of subscriptions necessary to canvass. It is presumed that the entire oversubscription will be accepted.

The senate finance committee in revising the revenue bill struck out the house provision taxing the salaries of the president, members of the supreme and superior courts and state officials.

"Austria's death message" is the name given by Rome to President Wilson's reply to Austria's peace note. In a word, the president refers the entire Austrian appeal for peace to the new nation of the Czecho-Slovak people.

A Czecho-Slovak national council recognized as a belligerent de facto government makes declaration of an independent state consisting of Bohemia, Moravia and Silesia, and "we therefore refuse longer to remain a part of Austria-Hungary in any form."

Final count of the losses on the Ticonderoga, sunk in the war zone September 30, shows the total loss to have been 213 lives, of which two were officers and 99 enlisted men. Most of the remainder were members of the crew. Two officers are reported carried off as prisoners by the enemy submarine.

London has figured that in war contributions forced from Belgian citizens by Germany and in war materials and machinery taken from Belgian factories the amount is 384,200,000 pounds sterling. This does not include destruction nor other cash losses, to say nothing of 1,750,000 workmen deported to Germany.

The advance of the Allied troops through Belgium has been more rapid during the past week than at any other time. Ostend, Bruges, Lille, and other important points have been cleared of the enemy. Fifteen thousand German troops were driven over the line and were interned by Holland. At times the Teutons make strong stand and counter-attack in the effort to hold back Allied troops that guns and munitions may be saved, but it is not thought that a determined stand will be made until the line reaching from Antwerp to Metz is reached.

A dispatch from Archangel, dated Monday of this week, says: "The reorganization of the government is bringing quick results as regards mobilization of men to fight the Bolsheviki." In addition, it is reported that there is dissension in the ranks of the Reds. The military arm of the Bolsheviki is dominant and is executing political suspects despite the efforts of Lenine and others claiming to head the revolutionary commission. The Red Cross has established a mission in Archangel which is saving many of the Russians from starvation. Starvation conditions are becoming more serious in Petrograd and Moscow.

German State Secretary of the Foreign Office Solf replies to President Wilson's note with an "offer of peace and an armistice from a government which is free from any arbitrary and irresponsible influence and is supported by the approval of an overwhelming majority of the German people." "It trusts that the president of the United States will approve of no demand which would be irreconcilable with honor of the German people, and with opening the way to a peace of justice." "The German government protests against the reproach of illegal and inhumane actions." "The German government has caused orders to be dispatched to all submarine commanders precluding the torpedoing of all passenger ships."

At the meeting of the French chamber of deputies after the release of Lille from the hands of the enemy welcome was extended to the two deputies, Delorey and Ragheboon who took their seats in that body for the first time in four years. The deputies reported: "It is impossible to denounce all the German crimes, but the most abominable was the carrying off of women and girls of 19 and 16 by enemy soldiers, their enforced submission to medical examination and their being obliged to work under French machine-gun fire for the German army. The Lens plains are nothing but an immense area of ruins with not one house intact. There cannot be a Frenchman who does not wish those culpable chastised."

Cracks and Splits in Oranges

Written for California Cultivator
By Robert W. Hodgson

AT about this time of year the old question as to what is the cause of cracks and splits in oranges never fails to furnish a topic of absorbing interest to orange growers. So far as the writer has been able to ascertain, this phenomenon occurs in practically every citrus producing area in the world. However, there is no doubt but that it occasions far greater losses in some districts than in others. Indeed, in most of the more tropical citrus producing countries it is almost negligible. We are by no means so fortunate in California and Arizona for the annual loss in these two states from the splitting and cracking of oranges reaches a considerable figure.

There is a marked difference in the prevalence of these troubles in the orange growing sections of this state. Those regions where the losses are heaviest comprise the San Joaquin and Sacramento Valleys. Moreover, the amount of cracking and splitting varies from season to season, in some years being very much worse than in others. Although occasionally found in other varieties, by far the greatest amount of splitting and cracking occurs with the Washington Navel variety.

Although commonly classed as splits, it seems desirable to differentiate transverse cracks from longitudinal splits, giving the name "cracks" to the former and "splits" to the latter. Cracks are much less common than splits and hitherto no rational explanation of their cause has been advanced. Splits are much more common and practically every grower has his own pet theory to account for their cause.

There are two distinct classes of splits, side splits and navel end splits. Many of the former, but not all, are attributable to inherent faults in the rind formed while the fruit is still in the flower stage. Such teratological phenomena, as they are called, are very common in citrus fruits, particularly so in the navel orange. Creases or seams are evidences of such weakness and very frequently side splits occur at such weakened areas. Those side splits which cannot be attributed to seams or creases in the rind, together with navel end splits have most frequently been assigned to irregularities in the soil moisture supply resulting in uneven growth stresses and strains between the juice vesicles and the peel. This theory seems quite reasonable and it is the writer's aim in this article to contribute additional evidence supporting this idea, which evidence has been recently brought out in connection with the investigations of Dr. J. Eliot Coit and the writer regarding the June drop of the navel orange.

During its early development the young orange consists very largely of rind with but a small cavity representing the carpels and containing the undeveloped ovules. The juice sacs, which later become the edible portion, are a very small part of the fruit at this time. This condition persists until relatively late in the growth of the fruit. Several months before maturity, however, these juice sacs, which comprise the interior of the fruit, begin to grow and swell at a tremendous rate while the peel coincidentally begins to decrease in thickness. It almost seems that it is being stretched by the expanding force within the orange.

Investigations by Dr. Coit and the writer, as well as later studies by Jensen, have shown that the water content of young developing oranges may vary very markedly within a short time. Extremes in variation during the critical period will cause the fruit to be shed, but after this period is passed all danger from dropping is gone. During the hot dry forenoon the young fruits decrease in water content and toward evening they begin to increase in water content. They actually dry out and then fill up again according either to changes in soil moisture conditions or in atmospheric conditions. If the soil moisture becomes deficient the fruits are the first to exhibit visible effects, losing their bright green luster and becoming flaccid. But even though soil moisture conditions do not go below the wilting point, if the air is sufficiently hot and dry the fruits lose water. Such tremendous variations in water content occasioned in a short period of time and brought about by environmental conditions cannot but be considered as favorable to the occurrence of growth stresses, especially at the time when such rapid growth of the juice sacs is taking place. As the rind becomes thinner, the chances for splitting increase, especially if the soil is allowed to dry and then is irrigated, or if very hot dry weather has been prevailing and a sudden rain comes up. The sudden imbibition of water or what amounts to the same thing, check in evaporation, results in strains and stresses which find their release in rupture of the rind.

The peculiar structure of the navel orange, consisting as it does of a double orange, one within the other, and the central pith of the one acting as stem to the other, provides conditions very much more favorable for splitting in this variety than in others, which is in direct accord with popular observations. Other evidence that this explanation of splitting is substantially correct lies in the fact above mentioned that splitting increases as the environmental complex becomes more severe. The San Joaquin and Sacramento valleys, being subject to sudden variations in temperature and humidity of a considerable magnitude, furnish conditions much more favorable to splitting then are found farther toward the coast. This last season furnished additional evidence supporting this theory. The fall was long and dry and in a large part of the citrus section no rain fell until February. Where the fruit was still growing, immediately following the first rain there were quite a few Valencia splits, although this variety is little subject to splitting.

Most of the splits due to the causes above described, however, on examination will be found to occur in oranges where the rind exhibits considerable variation in thickness. Most of those fruits having navel end splits will be found to have the rind coarse and thick at the stem end but almost as thin as paper at the navel end. This condition seems to be hereditary and therefore such fruits are by nature prone to splitting. While practices favorable to the maintenance of greater stability or less variation in the environmental complex, such as more careful irrigation and cultivation or summer cover crops, will help to prevent splits in this class of fruits, the only true remedy would seem to lie in the propagation of trees from bud-wood selected from trees not exhibiting this condition.

A certain per cent of navel oranges are infected with heart rot fungus, which causes the greater portion of infected fruits to drop. Some, however, remain to maturity. It seems possible that this fungus developing in the navel end might contribute to a portion of the navel end splits. If such be the case, no remedy for splits due to this cause can be seen at present.

For those cracks, side splits, and navel end splits not due to the special contributing causes mentioned above, the only remedy would seem to lie in the amelioration of environmental conditions. Soil moisture conditions can be maintained near the optimum by intelligent irrigation and cultivation, and it would seem reasonable that the summer cover crop would help in ameliorating atmospheric conditions.

Importance of Organic Matter in Soil

By R. S. Vaile

THE first and fundamental thing to learn about the art of agriculture in the tropics is the great importance of organic matter in the soil." This statement, made to me the other day by Mr. Stockdale, director of agriculture of Ceylon, is so in keeping with the thing that the citrus experiment station has been attempting to say for some time past, that it occurred to me you might be interested in certain of the measures which are used and advocated to keep up the organic content of the soil hereabouts.

Green manures are grown directly upon the land which they are intended to fertilize in two rather distinct ways. In the first place a long list of plants are used as annuals or biennials much as we use clovers and vetches in California. This method is followed in the young plantations of rubber and cocoanuts, especially where shading is not in practice. The legume is most commonly grown in strips covering about half the land between the trees, and is cut three or four times a season. The material produced in this way is used to mulch around the trees and is spaded under about once a year. Among the crops used in this way may be mentioned several Crotalarias (especially C. alata, C. mijussi, C. striata), Tephrosias (especially T. candida, which is said to be one of the most successful in Ceylon, T. Hookeriana, T. villosa), Trifoliums (especially T. resupinatum), Leucaenas (especially L. glauca), Indigos, Dhalls and Crotons (especially C. liglium). My attention was called to one rubber plot on the experiment station farm at Perandeniya, Ceylon, where a green crop of dhall had produced approximately 60 tons of green manure per orchard acre in the past 12 months, and I was told that Tephrosia candida at times even exceeded this. It is not usually possible to continue this practice in rubber plantations after the trees are five years of age, except inside hill plantings, where a narrow strip is maintained much longer on the edge of the terraces that are run between the contoured rows. After this time it is often necessary to spend as much as $15 per acre annually for artificial manures to keep up the plantations.

The second method of growing green manure directly on the land where it is to be used is seen in the tea, cacao and coffee plantations where shading the main crop is commonly practiced. The shade is formed by certain leguminous trees, such for instance as the Dadap (Arithrina indica), the Flamboyante (Poinciana regia), several Albuzzias (Albuzzia sp.), and a few species of acacia. The exact variety of tree to be used is determined in large part by the density of shade required, the Albuzzias, for instance, being much more dense than the Arithrinas. As a by-product, so to speak, of the shading, a large amount of green manure is produced by these trees. It is necessary in most cases to lop or heavily prune back the shade annually. The cuttings are broken into comparatively short lengths and used either to mulch around the trees of the major crop, or else are worked into the soil directly as it is spaded over.

In the paddy fields the exact method used in California is frequently followed. Sun hemp (Crotalaria juncea) is most commonly used for this purpose, as it is very well adapted to growing in the moist rice lands. It is not usual to grow such a crop oftener than once in two or three years, but one crop will give a much heavier tonnage than is expected in California. This crop must be cut before it can be worked into the soil, for there are no plows in this part of the world that will invert it directly. (As a matter of fact, about all the modern machinery to be seen in Ceylon or the part of Southern India where I now am, is the disc harrow. This tool is often used in the cocoanut groves, sometimes at the expense of the green manure crop.)

Another method of getting organic material is connected with the rather common practice of storing water from the rainy months in large "tanks," for use in irrigation during the dry periods. These tanks, by the way, are not at all like our reservoirs, but are extensive tracts of land in the floor of a small valley, across which a dam has been thrown. Water may back up behind this dam to cover several hundred acres. It is carried off in small distributing channels to the land farther down the valley as needed. Many of these tanks go dry, or nearly so, at the end of the rainless season, and at that time the floor of the tank is scraped quite clean of

Continued on Page 435

Agricultural News Notes of the Pacific Coast

Northern California

The rice harvest is on.

Gridley has a big crop of English walnuts.

Picking will soon begin in the cotton fields of Butte County.

Alameda County is getting ready for a squirrel poisoning campaign.

The Butte County farm bureau is now publishing a monthly bulletin.

The Almond Growers Exchange is shelling all nuts that show rain damage.

Coyotes are reported doing great damage in Yolo County to sheep and poultry.

Short course in horticulture at Davis University Farm, October 17 to November 2.

Old crop rice is practically out of the way and growers are hoping for good prices for the new crop.

F. J. Cunha of Hayward is urging all growers of peas in that section to get together in a sales organization.

Pear growers of El Dorado County have made plans for a thorough-going campaign against pear blight this fall and winter.

The forest service is advertising for the drilling of deep wells for range cattle in the Badger Springs section of Modoc County.

Many dairymen of Humboldt County are installing mechanical milkers because of the difficulty in securing hands to do the work.

Richvale, Butte County, is harvesting a hig crop of rice. Growers are somewhat afraid that warehouse facilities will he inadequate.

State Horticultural Commissioner Hecke is warning prune and pear growers to look out for thrips. Spraying should begin March 1.

The Hayward Pigeon Club expects to have a 1000-bird show in Novemher. An interesting feature of the show will he an exhibit of Homer pigeons for war use.

Early rains have been welcomed by the stock men of Yuba County. All cattle are heing rushed in from the mountain ranges in anticipation of an early winter.

Local meetings of the Butte County farm bureau will be held at Wyandotte, November 4; Bangor, 6; Thermalito, 7; Paradise, 12; Chico, 15; Durham, 18; Palermo, 20; Biggs, 22; Gridley, 27.

Several Sutter County farmers who have suffered serious loss from rain damage to their prune crops have announced their intention of providing themselves with artificial dryers for another season.

H. J. Veihmeyer, irrigation expert of the state university, has just concluded an investigation of irrigation resources and problems of El Dorado County. His report will he made public through the county farm bureau.

A rice grower in the Richvale district of Butte County has filed injunction against Japanese rice growers on lands above his who are draining their fields and letting the water overflow his grain, which is now ready for harvest.

Butte County olive growers are endeavoring to translate the recent ruling of the department of agriculture as to maturity. This is difficult because coloring matter does not enter into the determination of ripening.

Central California

Tulare Lake is nearly dry.

vest three quarters of a million bushels of wheat in 1919.

Kings County is now conducting a squirrel poisoning campaign.

Fresno County raisin growers have saved a large percentage of their rain damaged crops.

The Peach Growers' Association is now occupying its $25,000 packing plant at Turlock.

The farm bureau at Chowchilla, Madera County, will hold a hog auction sale November 6.

The results of Stanislaus County's squirrel poisoning campaign will be checked up November 1 and 2.

Rains have been welcomed hy owners of orange groves in Tulare County. It will save one irrigation. Stockmen also are happy.

President Joyce of the federal farm loan bank of Berkeley recently made a two-day survey of Fresno County farm resources.

The Stanislaus County farm bureau will hold its annual meeting and picnic in Graceada Park, Modesto, on Saturday, November 16.

Short courses in beekeeping will be given by the University December 2-7 at the University Farm at Davis. The same course will later be given at Visalia.

Petition is being circulated for the formation of an irrigation district including 10,000 acres of land in the Knightsen district, Contra Costa County.

The Kern County farm bureau has recently established a dairymen's department, alfalfa growers department, swine raisers' department and a cattlemen's department.

The first session of the moving tractor school, a recently planned state activity, was opened at Madera October 7. Other sessions will be held at different points in the state.

Four carloads of sheep were recently received for distribution to members of the Stanislaus County farm hureau. Members have pledged to take on their farms 2291 sheep.

Enrollment for the first rolling tractor school at Madera high school was so large that several high school boys were refused admittance. Only four hoys of draft age were enrolled.

Chairman Conley of the Madera County council of defense announces that farmers may now dispose of their straw as they see fit, as the government has filled all of its straw contracts.

Henry Markarian, a Fresno fig grower, addressed the members of Chowchilla farm bureau at a recent meeting. He considers much acreage in Madera County suitable for Smyrna fig growing.

Local meetings of the Stanislaus County farm bureau will be held at Mt. View, November 1; Hughson, 4; Jennings, 6; Tegner, 8; Denair, 11; Mitchell, 12; Thalheim, 13; Fairview, 15; Orange Blossom, 16; Wood Colony, 18; Patterson, 22; Claus, 27; Ceres, 28.

The water committee of the Kern County farm bureau is inaugurating a campaign for the financing of a preliminary water and irrigation investigation in Kern County. Voluntary contrihutions hy the landowners, at the rate of ten per cent per acre, is the plan for raising the necessary funds.

Southern California

Barley is selling in Imperial Valley at $1.90 per hundred.

The Talhert heet dumps have been closed for the season.

A numher of Riverside County dairies secured awards at the state fair.

Imperial Valley date growers are getting some excellent fruit from seedlings.

The State Fruit Growers convention will be held at Riverside November 11-16.

Ontario farmers are being urged to a strenuous campaign against the Russian thistle.

The Milk Goat Association of California held an interesting session at the Riverside fair.

Ventura's County Fair, while not so large as in former years, was a success from every viewpoint.

Sorghum mill has been installed at Pomona. Many people have heen raising their own sweets this year.

The cow testing department of the Riverside County fair was one of the most interesting features to attendants.

Riverside beekeepers are much encouraged over the prospects for good market. Bees are now busy on wild buckwheat.

Riverside orange growers are considering employing orange pickers from the Women's Land Army for the coming harvest.

Ventura County officials are warning ranchers not to overload their wagons to the detriment of the newly paved county roads.

The Anaheim Walnut Growers' Association shipped a carload of walnuts to the Boston market. The carload was valued at $12,000.

The October rains have also embarrassed beet growers whose sugar beets are still in the ground, and they fear losing sugar content.

Three carloads of walnuts shipped out last week by the Richland Association brought returns of $12,040, $11,760 and $11,086 respectively.

Children of Center school, near Somis, Ventura County, have turned over $164.78 to the Red Cross from their season's crop of lima beans.

Farmers are having quite a bit of trouhle getting harvest hands in Imperial County. Cotton pickers and day laborers are needed at good pay.

The first annual meeting of the Los Angeles farm bureau, which was to he held October 17, was postponed indefinitely on account of the influenza.

The Imperial Valley Press states that ranchers of the North End are raising a subscription fund of $10,000 to complete the drainage canal to the river.

The Beaumont Fruit Growers' Association is still shipping out a carload of apples per day. Buyers have heen ready to take all fruit offered at good prices.

Meeting of the Avocado Growers' Association, postponed on account of the influenza quarantine, will be held as soon as possihle. Members will be notified of the date.

It is anticipated that 4,000 acres will be planted to lettuce in the Imperial Valley. For a time it appeared that the lettuce industry would be handicapped hy inability to secure refrigerator cars, but that danger seems past.

The Coast and General

Nebraska has a big crop of poultry this year.

Florida's pecan crop will be only 50 per cent of normal.

Florida shipped out last week 124 carloads of grapefruit.

Many apple growing sections of New York will this year sell apples in bulk.

Frost has done considerable damage to the celery crop of Western New York.

The potato shipping season of the Northwest is very much behind last year's.

Thurston County, Washington, has decided to dispense with the services of a farm agent.

Recent storms in Florida have damaged the citrus crop it is estimated to the extent of 100,000 boxes.

Most of the harvesting of apples in the orchards of Dufur district of Oregon has been done hy women and girls.

Sheep men of Nevada and Utah are worried over scarcity of herders and exorhitant wages demanded by the few available.

The hoys' and girls' agricultural clubs of Skagit County, Washington, held a fair and exhibit at Mount Vernon, October 11-12.

Farmers of the Ritzville district of Washington have secured seed for fall wheat from Montana. They are expecting to plant a considerable acreage.

Canada has a good potato crop. It is expected to be larger than last year's. Manitoba will have a million hushels more than its large crop of 1916.

Kansas City jobbers paid last week for California heans: Blackeye, $7.50; Lady Washington, $11.20; Pinks, $8.40; pea beans, choice, hand picked, $10.30.

Texas shippers of green vegetables are protesting over the new express regulations which base freight charges on actual weights instead of estimated weights as has been the custom.

Cabbage growers of Wisconsin have been supplied with disease resistant seed for this year's planting. "Cabbage yellows" has made serious inroads in plantings of former years.

Steps are heing taken to organize the hutter, cheese and egg trade of the United States and to appoint representatives to an advisory council to take up questions with government authorities.

Dairymen of the country have been in conference with Food Administrator Hoover in an effort to devise some means of reducing inflated prices of butter caused by the large army and navy demands.

On account of loss of prunes from weather conditions in California Oregon prune growers have been asked hy the government to hold their dried crop until the government can make a recheck and determine how much of the Oregon output must be reserved for army needs.

Members of the Yakima (Washington) Potato Growers' Association, which is said to control about three-fourths of the valley's production, have agreed to stand by $40 a ton as the minimum price for No. 1 Netted Gem potatoes and $36 as the minimum for other varieties.

Where Pineapples Come From

By Arthur L. Dahl

THERE are some fruits served on family tables throughout the world that carry with them the suggestion of the Orient. They conjure up pictures of beautiful tropical countries, with warm, brilliant skies, dense growths of palms and odorous plants and picturesque natives fantastically garbed. The pineapple is of this sort, and when we eat the delicious fruit, the odor and taste are indelibly associated in our minds with the far-away places of the earth.

The story of the development of the pineapple industry is replete with incidents of the constant fight of man to overcome the handicaps of a hot climate, for it shows how a tropical fruit, unsuited for being transported long distances, has been brought to the tables of dwellers in every country through the science of canning. The bouquet and quality of the pineapple is not only entirely retained by canning, but the process insures a higher degree of maturity in the marketed product because the fruit, when canned, is not picked until fully ripe; whereas when shipped in the fresh state it is necessary to pick them before the sugar content has reached its full measure.

The pineapple grows wild in most tropical countries, and the export of the fruit forms a large part of the trade of the West Indies. Although the fruit is successfully grown in Florida, large quantitier are imported from the Bahamas and Hawaii. The fruit from Hawaii is said to have no superior, and the exports from that source are steadily increasing. While large quantities of fresh fruit are shipped to this country the principal efforts of the pineapple growers are centered in canning the fruit. Today the Hawaiian canned pineapple is the very finest in the world, and in the development of this industry the greatest strides have been made along the line of mechanical appliances for handling the product. The packing plants of the islands represent the last word in cleanliness and efficiency, and this is in strong contrast to the primitive methods still in vogue in Singapore, for many years the center of the pineapple trade.

Baltimore was the pioneer pineapple canning center in this country and in the early nineties millions of the fresh fruit were sent there from the tropical countries. A regular line of fruit steamers was operated to carry the fruit from the West Indies. Later the Cuban pineapple supplanted the Bahamas, the fruit being shipped to New York by steamer, and then to Baltimore by rail. With the entry of Hawaii into the American market, the Baltimore industry declined, although the canning of the fruit is still carried on there. Next to Hawaii, the largest supply of pineapples comes from Singapore and the Straits Settlements, while smaller quantities are produced in Siam, Formosa, the South of China and the Philippines.

Pineapples were grown to a limited extent in the Hawaiian Islands as early as 1890, but none of the product was canned until 1900. As indicative of the rapid growth of the industry it is interesting to note that from 2000 cases canned in 1901 the production jumped to almost three million cases in 1917. The great bulk of the fruit is packed by ten large companies, nearly all of which are controlled by American capital, such large interests as Libby, McNeill & Libby finding the venture a profitable one.

Hawaiian Pineapple Field Ready for Harvest

The pineapple industry in the islands is confined almost entirely to the Oahu district, the heart of the industry being at Wahiawa, which is a large plateau occupying the central portion of the island of Oahu and having an altitude of 500 to 1200 feet. The concentration of the pineapple plantations in this district is not due so much to its peculiar adaptability for that purpose, but rather because of its superior transportation facilities. The fruit grows with equal success in other parts of the islands and the acreage is being gradually extended as better transportation facilities are developed.

The first factories were erected in the pineapple districts, and several of the large ones are still operated there, but with the completion of a railroad from the Wahiawa district to Honolulu most of the plants found it more advantageous to locate in Honolulu, where labor is more plentiful and shipping facilities are better. As the fresh fruit is carried but a distance of 22 miles from the plantations to the factories, it reaches the canners in as good condition as it would if handled locally.

Pineapples are canned throughout the year, but the principal portion of the pack is put up between May and September.

The fruit is picked for canning only after it has thoroughly ripened, and the pickers go along the rows choosing such as are ready for the factory. After cutting off the crowns, which are left at the ends of the rows in the fields to be used for replanting, the pineapples are placed in wooden boxes, so constructed that one can be piled on another without injuring the fruit. The average canning pineapple weighs from three to four pounds.

Arriving at the factory the boxes are loaded upon trucks and wheeled direct to the peeling room.

There are a number of different machines designed for peeling pineapples. The earlier, and cruder machines merely peeled the rind and removed the "eyes" but the newer machines combine these steps with those of removing the core and cutting the fruit into a size to fit the can. A second machine slices the pineapple to a uniform thickness.

Owing to the fact that the public had been educated to use certain sizes of cans, the early canning processes involved an enormous waste. Frequently a pineapple weighing from six to ten pounds would be cut down to the same size as one weighing half as much, and as much as 40 per cent of the fruit thrown away. As the sweetest part is that next to the skin, this waste carried with it the best part of the pineapple. Again, no effort was made to save the juice which flowed from the fruit as it was pared and sliced. The modern practice, however, is to save all of the fleshy part of the fruit and put it through machines which separate the flesh from the rind and eyes, grinding it up into crushed or grated pineapple, which is canned and sold to confectioners and other large users of the crushed fruit.

As the pineapple passes through the sizing, paring and slicing machines, the rind and attached flesh drops to a conveyor belt moving towards the macerator. It is fed from this conveyor automatically into the macerator and carried to the press. The skins and eyes are put through a press to extract as much of the juice as possible, after which the pulp is burned.

The main portion of the pineapple passes from the machines in another direction, over a separate set of conveyor belts between lines of women seated at tables. These women, wearing rubber gloves, select the various grades of slices from the moving belt. The first women pick out the best slices, of which it takes eight to fill a number 2½ can. The other women farther along the belt take the second grades of slices, and the women at the end receive the poorest or broken slices. As the flesh of this fruit is very tender and juicy, much of the finest quality goes into the lower grades by reason of the slices failing to retain their shape during the processing.

After the sliced fruit has been placed in the cans they are put upon mechanical conveyors which carry them to the syruping machines, where the cans are filled with syrup. The same belt then carries the cans through a steam box where the air is exhausted in the cans before the tops are automatically fastened by double reamer machines. After capping they are placed in trays and transferred to the open-bath processing tank, where they are allowed to remain about 30 minutes. The time during which they are cooked is usually regulated by machinery, as the cans are automatically carried through the cooker at such a speed that they will emerge at the end of the alloted time, to be plunged

Continued on Page 423

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Walnut Crop Threatened

By William Wood, Horticultural Commissioner, Los Angeles County

THERE is a new infestation of what threatens to be a real pest to the walnut industry —the codlin moth. For 15 or more years this insect has occasionally been found attacking the walnut, but as it was only an occasional nut affected it was thought the insect would never become a real pest because the walnut was not a real host plant, and that it would never become numerous enough to be considered.

In this we see that we were mistaken. It would seem that the codlin moth is gradually becoming accustomed to the walnut. Prof. Ralph E. Smith has been making quite an extensive investigation of the walnut groves in Santa Barbara, Ventura, Orange and Los Angeles Counties. He reports that half of the walnut crop in some of the orchards in Santa Barbara and Orange Counties has been destroyed this year by this insect. He also reports that he was unable to find any nuts infested by this insect in Los Angeles County.

This matter has been brought to my attention by Prof. Smith and by the Walnut Growers' Association to see if anything can be done to keep the cull walnuts that are grown in the infested counties from coming into Los Angeles city, as a very large per cent of the worms are to be found in the cull nuts, also in the bags that contain them, and practically all of this class of nuts are brought to this city.

Prof. Smith agrees with me that these nuts should be disinfected as well as the bags, before they are allowed to come into this county. I believe our horticultural law is adequate to cover this and protect the growers from the introduction of this pest and it is my intention to enforce the disinfection of all cull walnuts and the bags that are used to contain them before they will be admitted into Los Angeles County.

Growers who wish to sell their culls in Los Angeles County must have the walnuts disinfected and a certificate from their horticultural commissioner or an inspector must accompany the shipment, certifying that the nuts and the bags they are in have been properly disinfected. If upon inspection in Los Angeles County, the nuts are found to be free from live insects, they will be allowed to be sold.

I recommend the following disinfectant for walnuts:

Stack the nuts six trays high. Cover with a tight canvas large enough so that the edges can be weighed down with earth, then burn eight ounces of flowers of sulphur under the trays. The canvas should be left on for two hours.

Northern California Notes

Written for California Cultivator By W. S. Guilford

THE rainy weather of the latter part of September and the first of October has been followed by light north wind and sunshine. This greatly delights the rice growers and has made it possible to save many prunes that would otherwise have been lost.

On the dry yards where large tonnages of fruit were being handled it was not possible to move the fruit on the trays—stack them and lay them out fast enough to make the greatest possible saving of fruit—but where there were fewer prunes and more labor the prunes were kept on the move until this good weather has made it possible to dry them.

Some of the prunes have been dipped two or more times. Some have used the regular lye dip, rinsing the fruit as usual; some have used the lye without rinsing; and some have used salt and water. Good results have followed in some cases with all of these methods. And in other instances the prunes have been so soft and the mould so persistent that it has been necessary to feed them to the hogs.

In the Moody & Burton Orchard at Butte City the loss is estimated at not over 20 per cent including the fruit that spoiled on the ground in the first big rain. At the Monroeville Orchard at Hamilton City the loss on about 60 tons will not be over two tons.

In other orchards, however, the losses are reported up to 60 to 80 per cent of the crop.

Rice harvest has started; the crop from some of the earlier varieties will be threshed and on the way to the warehouse in a few days.

Mature Olives

The department of agriculture has ruled as to the ripeness of "California ripe olives":

"The bureau has received numerous complaints that certain olive packers were packing immature, unripe olives under a labeling which would indicate that the product was a mature, ripe olive, and that these packers so manipulated these immature olives during the process of packing as to give them the characteristic appearance of a ripe olive when packed. Such ammature olives, mislabeled as ripe olives, would be regarded as in violation of the federal food and drugs act if brought under the jurisdiction of the act. An extensive investigation of the changes that occur in the composition of olives during ripening has been made. The results obtained indicate that the index of maturity for olives is the oil content of the flesh.

"As a tentative standard of maturity for Mission olives and other common varieties except Manzanillo, Ascolano and Sevillano, an oil content of 17 per cent in the flesh is regarded as a minimum. The Manzanillo olive should contain a minimum of 15 per cent of oil in the flesh to be regarded as ripe or mature. Olives containing less than the percentage of oil in the flesh specified above would not be regarded as ripe or mature, and, when brought within the jurisdiction of the food and drugs act, would be regarded as in violation thereof. For the large-fruited varieties, such as Ascolano and Sevillano, no standard of maturity is proposed, since these varieties are, of necessity, gathered when immature. Such olives can not properly be designated or labeled as 'Ripe.'

"These minima for the oil content of ripe olives are to be regarded as tentative. The bureau will welcome such suggestions and representations in regard to them as the trade may desire to make. Should it be determined at a later date that the minima above given should be changed in any way, due notice will be issued by means of a service and regulatory announcement."

A Sugar Saver

That 250,000 tons of wine and table grapes now worth $4,000,000 whose market will be cut off by war prohibition in 1919, if made into syrup would be equivalent to 40,000 tons of sugar of a present value of about $8,000,000, is the leading statement of a forthcoming bulletin on grape syrup by the Agricultural College of the University of California.

It is further stated that investigations carried on have resulted in devising methods by which an excellent table and cooking, and even a fruit canning syrup, may be made from these grapes with very slight changes in the present equipment of the wineries and sugar factories of California. It is also proposed that by the cooperation of grapegrowers, wineries, su-

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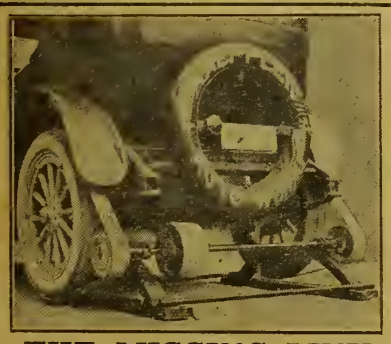

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To the names of the illustrious generals of today, history will justly add General Housewife.

gar factories, and canneries in the state, the wineries purchase the grapes during the vintage of 1919, extract and store 50,000,000 gallons of juice, the larger sugar factories receive this juice during the spring and summer, concentrate it, and ship the syrup to the canneries for utilization in 1920. By using the major part of this syrup in the proportion of 25 per cent to 50 per cent with sugar in most of their canning, and entirely with some fruits, the quality of their product would in no way be lowered.

Regarding the marketing of the grape-syrup the bulletin has the following to say: "It would doubtless be impossible to market this large quantity of new product so quickly without some assistance or encouragement from the government. A regulation allowing the free purchase of grape syrup while limiting the purchase of cane syrup or sugar and permitting the purchase of sugar for canning only when accompanied by a certain proportion of grape syrup would dispose of the whole crop. As grape syrup, made by the processes described in bulletin, has been shown to be wholesome and attractive, such a regulation would work no hardship to consumer or manufacturer and would result in saving a large quantity of food material. It would also safeguard the livelihood of hundreds of families."

THE ALMOND IN CALIFORNIA

The experiment station of the college of agriculture of the University of California at Berkeley recently issued "The Almond in California," by R. H. Taylor. It is Bulletin No. 297. It may be had by writing the station. Here is a bit of a quotation from it which indicates the interesting manner in which it is handled: "The almond (Prunus communis) is supposed to be native to the countries around the Mediterranean and at present the bulk of the world's supply is produced in that region. It resembles the peach somewhat in manner of growth and character of blossoms and leaves, but the wood is much harder and the tree is longer-lived under equally favorable conditions. The fruit, instead of having a thick, fleshy pericarp as in the case of the peach, has a thin, leathery pericarp or hull, which splits on ripening and generally opens when dry, exposing the nut inside.

California produces over 98 per cent of the entire American crop and has done so for many years. During the period from 1900 to 1913 the number of bearing trees remained approximately the same, new plantings having replaced old orchards that were being pulled out. The variation in California production from year to year prior to 1915 is due to seasonal variations rather than to change in acreage."

NURSERYMEN IN JOINT SESSION WITH FARMERS AND FRUIT GROWERS

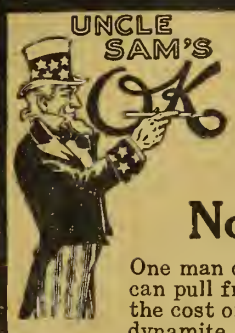
The greatest conclave of horticultural interests California has ever seen will take place in the city of Riverside, November 11 to 15, when the Annual Fruit Growers' and Farmers' Convention, the annual meeting of California Association of Nurserymen and an Interstate Conference on Plant Quarantines will convene.

How many people know the relation of the nurserymen to our horticultural industries? The first requirement for success as a fruit grower is good stock. Without good trees success is not possible. How to get good trees. What is the difference between a good tree and a poor one! Drone trees versus heavy producers. Diseased versus healthy stock for future production. These are some of the questions which the nurserymen will discuss.

The California Association of Nurserymen was organized in June, 1911 in the city of San Jose. The first annual meeting was held in Los Angeles in November of the same year. Its object was to protect and develop the commercial production and sale of plants and trees and to regulate methods of handling the business to insure better grading and classification. If the growers have any grievance to place before the association, here is the opportunity.

The convention week at Riverside is for the entire state and farmers, fruit growers, nurserymen and florists are planning to make this a busy week.

Money In Stump Land



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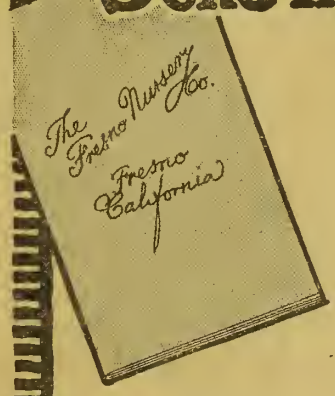

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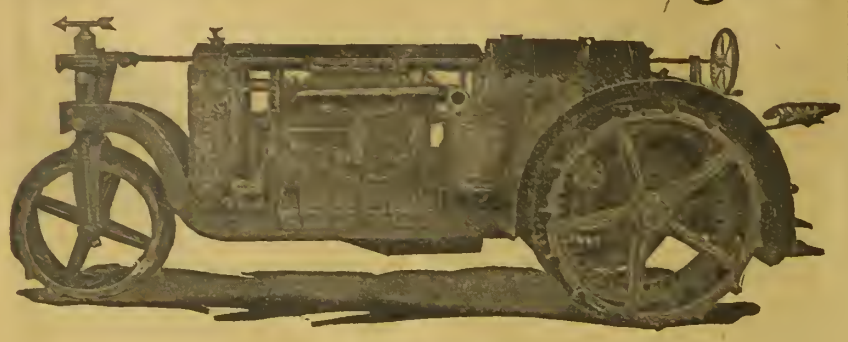
The Old Order Changeth



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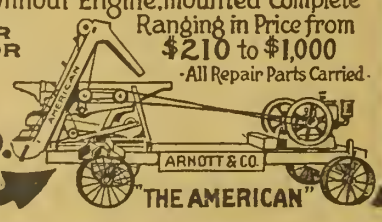

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Garden Trees

Written for California Cultivator By Ernest Braunton

NO garden is complete without a few trees. They are a fundamental necessity. Mingled with them should appear a number of shrubs and in front a border or edging of flowers. Then we have the true garden background, also a broken and sufficient sky-line. These features are essentials in the art of garden building.

Some very showy flowers are borne on trees and no shrub or lowly plant could present a more solid mass of flowers than some species of acacia, as well as a few other favored trees, and many are charmingly fragrant. Aside from flowers many trees bear foliage which is not surpassed in beauty by any in the kingdom of plants. And when we consider the fruits that may be gathered from trees of great value as ornamentals, we are again moved to declare that no garden is complete without a few trees. It seems to me that no person in moderate circumstances should harbor a tree that does not produce a fruit crop. Only the rich are at all justified in planting for ornament only. If we did not have evergreen fruit trees every whit as decorative as the best ornamental I would not so persistently urge the dual purpose tree.

Christmas Poinsettias

It will soon be time to feed poinsettia plants with a view to getting holiday flowers. It is now a little late to prune them for Christmas flowers, but if I had tall ungainly plants and lived in a section fairly free from frost I would prune them severely, fertilize and water well and secure good winter flowers. The poinsettia is a gross feeder and will assimilate very frequent meals if they are not too strong. The plant is a native of elevated regions in Mexico and so pines for cool, rarified air. Therefore cool weather, without frost, is the proper atmospheric medium in which to grow large flaming heads. The plant itself grows best in hottest weather if well supplied with water.

Poor Avocados

"A Rancher" writes to say he cannot get a satisfactory growth on avocado trees; that his soil is very light and gravelly and water supply is light. That is a description of soil and other conditions where the growth of avocados should not be attempted. I have no advice to offer other than may be implied in that statement. Dig them up and throw away or ball and transplant to heavier and richer soil where a fair supply of water may be had. No advice as to treatment in their present position will be attempted.

A New California

Now that the British have driven the Moslem hordes out of Palestine it is safe to presume they will never again be allowed to rule it. It will be either a British province or a British protectorate for the present. All fair minded students of history cannot but hope that the Israelites will again populate the land and again make it bring forth abundantly.

Palestine is about one-third as large as California, but in other ways so near like it as to make one marvel. While countries much nearer to us have a vegetation wholly unlike ours, no country on the globe has a native vegetation so near like ours as has Palestine. Its climate has the same range of temperature, rainy and dry seasons. And the topography is closely similar. They have their Dead Sea, below ocean level; we have our Salton Sea.

The Garden Poet

A few years ago the World's Work of New York printed a review of the life work of Dr. L. H. Bailey, the world's foremost horticulturist. The statement was made: ". . . has written more works that are standards in horticulture than any other author, living or dead." But Dr. Bailey's writings range far outside the agricultural and horticultural field, yet always with the aroma of soil and plants emanating therefrom. I rejoice in the possession of many autographed copies presented by this famous author and last week received three. One of them is called "Wind and Weather," a book of nature poems. None of the heroic has been attempted, but all are simple, readable verses carrying a message. List to this one, entitled "White Clover":

"A vagrant plant to my garden came,
And escaped the workman's hoe;
He knew it not by leaf or name,
So he let it stay and grow.

"It grew full well in the garden mould
And covered a space yard-wide;
He watched the honey-white heads unfold
And pointed them out with pride.

"Many a weed in the garden lot
Were fair as the clover blow
If only its name were all forgot
And 'twere giv'n its chance to grow."

Mealy Bugs

Mealy bugs have ravished the gardens for the past few years and the pest is getting no better very fast. In my own garden I have combated it quite successfully with a solution of a well known and popular brand of washing powder, symbolized by a pair of husky dusky twin babies. Those who knew said to use one pound to five gallons of water, but I have used three and a half gallons of water and injured none of the plants to which it was applied, yet it greatly discouraged and depressed the enemy. Their "morale" was completely broken and their ranks badly decimated. In whole divisions not a corporal's guard was left and these are retreating in disorder with death staring at them on all sides. The mealy bug is the most serious of garden pests, but it can be controlled with little trouble.

Cottage Gardens Beautiful

England's cottage gardens have long been noted for their attractiveness and have been much in print and the praises of returning tourists. I am satisfied nearly as much may be said of all countries. The simple taste, simply expressed, is natural and bears a natural dignity and beauty that attracts all. Mr. Mark Fisher was asked to visit and paint in a certain locality in England. He was a noted landscape artist. His reply was: "There are too many gentlemen's places there to suit my work." Too much of man's work was to be seen, masonry, fences, railings, balustrades, figured fountains, small clumps of large trees, whirligig beds in lawns, sausage links and rosettes of plants in roadways, and other evidences of the dominance of aberrant minds drove all artists away. The more natural gardens, and therefore the more beautiful are the cottage gardens.

Compost Leaves---Don't Burn Them

Leaves of all sorts are rich in the chemical elements that plants need. Rotted leaves or leaf mold is one of the oldest and best fertilizers used by gardeners, for it not only enriches the soil but gives to it a fine loose texture which is ideal for plant growth. Garden soils of the rawest and poorest conditions will show much improvement next spring if a quantity of leaves is spaded in this fall. Old gardeners treat a strip of ground in this way each fall, on which to grow the most delicate vegetables the next year.

When leaves are raked up in the fall they should be dumped on the garden, or better still, piled up with a small amount of manure. This will form a compost of the richest kind after the leaves have rotted. The compost is spread thinly in the rows when planting spring crops. Mixed with an equal quantity of earth, it makes the best potting soil for house plants and for use on flower beds. Leaves from trees along the street should always be raked up and used by gardeners in the neighborhood, and forest leaves should be collected wherever available.

THE GREATEST COLONEL IN THE WORLD

Ever since the world was young I have reigned supreme and today, at the head of a conquering army, I am proud to find myself the Greatest Colonel in the World.

In the days of my infancy I established a foundation for a career that has yet to be questioned. Through countless generations I have maintained the respect of mankind, and there lives no one who dares but call me friend.

From early history I have been welcomed in the palace of the king; in the lowly hut of the peasant I am worshiped. In periods of strife among nations I have adjusted myself to the surroundings and have always proven worthy of both victor and vanquished. Travel as you may the world over, on land and sea, from north to south, east to west, I am your constant companion; whether it be in the tiny hamlets and villages or thriving towns and metropolis, striving at all times to maintain that high standard of efficiency that always marks my endeavors.

With Stanley and Livingstone I laid bare the mysteries of the African jungle; with Peary and Amundsen I shared the perils of the Arctic, and thus you find me through centuries of trials and tribulations ever increasing my power to help the world's population in the struggle for existence.

Looking back through the years of my history, through famines and plagues, through revolutions and worldly wars, my sacrifices have been naught compared to the sufferings of the conflict of today, the battle for an everlasting peace and the justification of humanity. As heretofore, I am day by day proving the leading factor in the winning of the war for democracy, and although my army has responded nobly to the call, my ranks will continue to thin unless I have the aid of every individual in every home. And if every man, woman and child (whose liberty will be jeopardized by my failure to prove results) will rally to my standard and sacrifice their pleasure as I have done, there can be but one result—Victory for Democracy, Defeat for Autocracy. And when that joyous day of peace arrives you will find me at your service as a leader of a conquering army: The Greatest Colonel (Kernel) in the World.

My name is WHEAT.—E. M. Van Antwerp, in The Sperry Family.

TRACTOR PLOWING INSURES BETTER WORK

No horse gang can possibly do the quality of work that can be accomplished by an engine gang. Anxiety to spare the team has cut a big slice off the profits of many a farmer. For the sake of his horses he has plowed three or four inches deep when his judgment as a farmer said "go deeper." He has often plowed late on account of hard ground, and he has many times allowed a field to remain unplowed on account of worn-out teams. Under normal conditions, late plowing never produces as good results as early plowing. Many a farmer has fed and harnessed by the light of the lantern, gone to the field and worked his team hard to take advantage of the cool of the morning. With the approach of the hot hours of midday, with vicious flies sapping the vitality from his faithful team, he has eased up on the work or quit the job. In using the tractor for plowing, there are none of these distressing conditions to be taken into consideration, nothing to think of but the quality of work done. It is possible to plow deep without thought of the added burden.

Deep plowing may generally be taken as an indication of good farming. In any normal community the farmers who plow deeper than the average of their neighbors may be safely considered the best managers. These farmers usually have the best crops, because by deep plowing they have been able to use a large quantity of the natural resources of the soil. Deep plowing, especially in heavier soils like clay and those which tend to take on a hard pan character, loosens up the ground and permits easier root penetration and a greater absorption of rain water.

The war calls for the team work of soldier son and soldier father — the hero of the trenches and the hero of the furrow.

A WARNING TO RICE GROWERS

As a war asset the rice crop promises to eclipse previous records. It may not be generally known that the use of rice in the United States has in past years depended largely upon the locality, for in the North it was served as a custard or pudding and in the South invariably as a vegetable. Now it has attained first rank as a conserver of meat and flour.

Adequate storage room in some cases for the new crop has fortunately been provided, but, with the information that freight is congested and that general warehouse facilities are scanty, the question of the conservation of this staple crop is paramount.

Scrupulous care should be exercised that the proposed warehouses are clean and harbor none of the weevils so destructive to rice or to beans and other dried legumes.

When the vast losses due to this pernicious agency, in California alone, are considered, and provided with the advance information that the losses are largely preventable, it is but little short of criminal that they should exist.

If your warehouse is infested with insects, and you are not positive as to their nature, send specimens to the state horticultural commission for determination and remedies.

In any case, fumigate if necessary and clean up before you warehouse your crop.

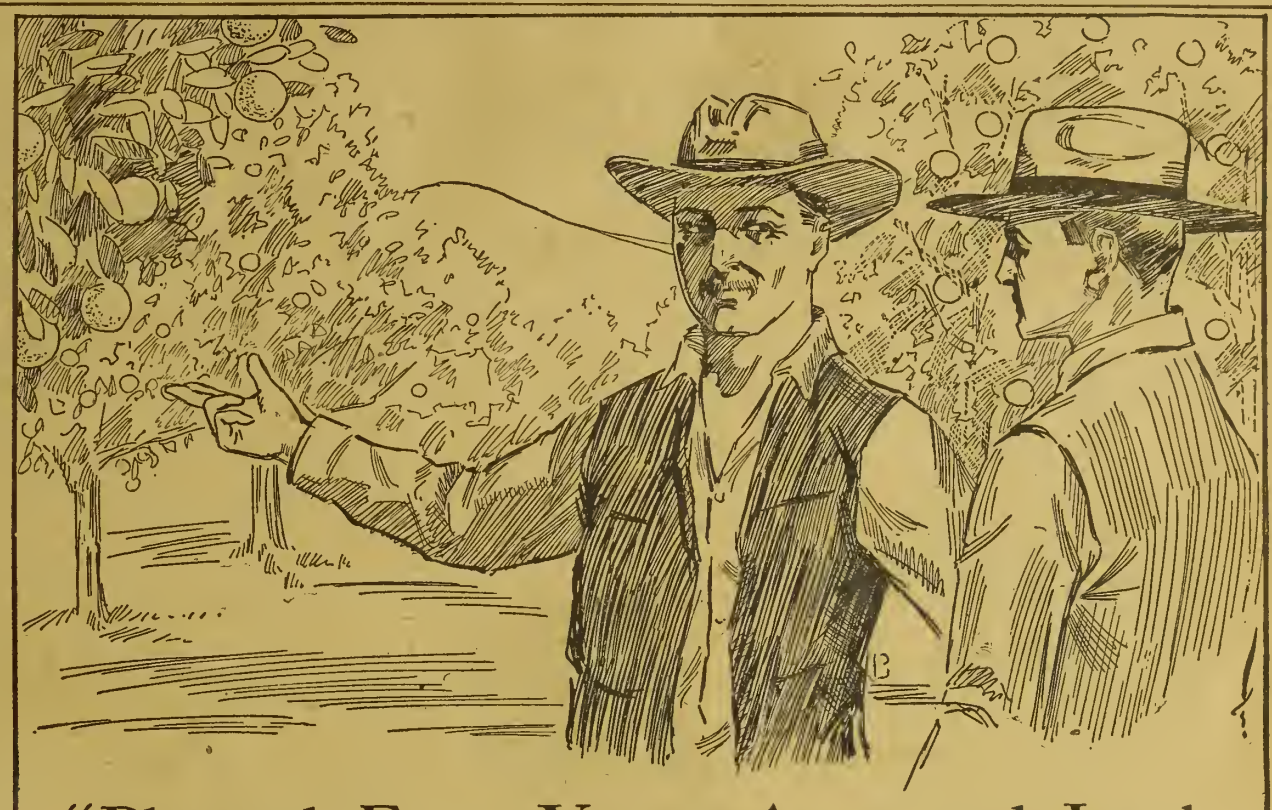
This may save you much money in the end. Such action will aid in maintaining the high standard of excellence for which California is justly noted.

Information on fumigation may be had by addressing the State Commission of Horticulture, Sacramento.

NO LIMITATION ON SALE OF OIL AND GASOLINE

To correct an erroneous impression that has been given circulation, the war industries board and the United States fuel administration join in the announcement that no regulations have been issued with respect to the sale of oil and gasoline. The fuel administration has urged that wasteful practices in the use of oil and gasoline be stopped and all reasonable and proper measures of conservation be observed.

There must be no fear in the matter of giving. If you have only a sandwich to give to a beggar, give it freely and gladly and forget it.



"Planted Four Years Ago, and Look At Them Now"

"Hello Fred—Do you remember when we planted this orchard? Remember how I laughed when you wanted me to try dynamite and blast out the holes instead of digging them, and how you finally talked me into it? Well—I'm laughing another way now, Fred,—and you can bet your boots I thank you for telling me about

HERCULES DYNAMITE

"I never planted an orchard with less labor in my life;—I never had one that grew so fast nor where fewer trees died. And it's bearing a full year ahead of my neighbor's trees that were planted at the same time, in spade dug holes."

"My this-year's crop will pay twenty times over for the dynamite that we use, and it makes me smile to think how easy it was to plant those trees!"

"There are a good many people using dynamite in their orchards around here now. They're finding out that the easiest way is the best way when it comes to planting trees."

"They say, too, that blasting between the rows is a good way to keep your bearing orchards in good shape; it loosens the earth deep around them and gives their roots a chance to spread. I'm going to try it next spring."

"I want to thank you again, Fred, for lending me your copy of 'Progressive Cultivation'. I've got one myself now—the Hercules Powder Co. sends it to you free, if you write them for it. I wouldn't part with my copy for the world!"

HERCULES POWDER CO.

1013 Chronicle Building

San Francisco California

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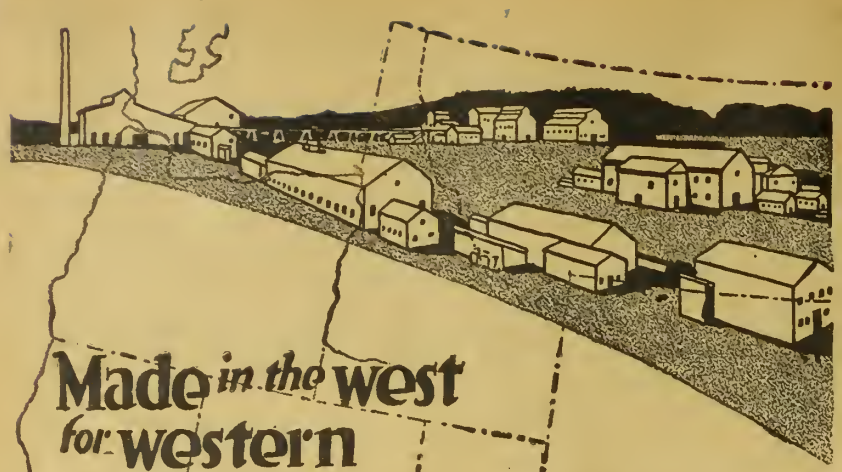

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Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Budding Fruit Trees

When is best time for budding prune on plum and peach on peach? What kind of buds should I take? My buds look very small. Should they be plump or swollen? Should any wax, rag or string be used?—Subscriber, San Anselmo.

All kinds of trees may be budded whenever the bark will lift readily. It will only do that while the sap is flowing, and that is what makes the bud grow. Take the buds from well matured wood of the current year's growth. Cut off the leaves just long enough to miss the bud; cut the bud and insert it in the usual way. Wrap snugly with twine without waxing. Cut the strings when they show signs of binding the bark.—J. W. M.

Stump the World

I have a Stump the World peach tree seven years old, fine large tree and healthy, but has never borne more than a dozen peaches any year. Is that variety considered a good bearer in the vicinity of the ocean? I have cut it back closely several years, but it did not make any difference.—Subscriber, Long Beach.

Stump the World peach is not a prolific bearer in Southern California so far as we know. At Pomona it never bore large crops, but the size and quality were all that could be desired. A good rule to follow with light bearers is to prune light.—J. W. M.

Fermented Grape Wine

Mash four pounds of grapes, put in a crock with four quarts of water, leave in a cool place for three days, stirring often. Strain off the liquid, squeeze the pulp, add three pounds of sugar, stir until dissolved, and put into a barrel, covering with a light cloth. Stand in a dry, cool cellar and when fermentation stops put the cover on the barrel. Leave all winter, rack off or bottle in the spring. For a larger quantity of grapes the same proportions.—F. S. Johnson, Devore.

Goat Not a Milker

I gave a dry goat and $50 for a doe that the purchaser said gave five quarts a day when fresh and he milked her when she gave three quarts. I have fed her well and milked her three times a day and have never yet been able to get more than a little over a pint a day. What can I do?—Subscriber.

The goat breeders' associations should take a hand in cases of this kind. The industry is growing rapidly and drawing to it some of the unscrupulous who are ready to take advantage of innocent purchasers. At the price paid for this animal the conscientious breeder would replace her with one which will deliver the milk. As to the five quart production, the purchaser should not expect anything like this as a consistent yield. We may refer to the record of California Gretel, which appears with her picture in the Cultivator of May 18, 1918, on Page 622. She gave in 365 consecutive days 2941.5 pounds of milk. This was an average of 3.8 quarts for the year, and this is considered a wonderful production and makes her one of the greatest goats in the state if not the entire country. As to advertising the man who sold the animal, that would depend on whether the purchaser has evidence which would be acceptable to a court.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Canner Refuses to Pay

Contracted with Arizona canning company to sell them tomatoes cash weekly settlements; I filled the order for four weeks and no settlement; I advised them that I would stop shipments until payment made and drew draft on them which was refused. The party is financially all right. Can I take the matter up with the United State food administration? He advised shipments were all right; in order to secure and retain his license number is the canner not obliged to give fair treatment?—Subscriber, Ontario.

Legally all you can do is to bring action for breach of contract. The food administration has very large and discretionary powers and it would doubtless take drastic measures in a case such as the one above stated.

Unlicensed Veterinarian

Can a veterinarian charge for services when he is not licensed? Can he sue for services rendered? When by his neglect a valuable animal has been lost can recovery be made for services? The man posed as a licensed veterinarian and I did not know he was not until after the horse was dead.—Subscriber, Santa Ana.

The veterinary surgeons act provides that any person violating the provisions thereof is guilty of a misdemeanor and that any person who performs treatment upon the lower animals or professes to treat them comes under the head of a veterinarian, if he makes charge therefor, except in the case of members of the medical profession in an emergency; the act exempts from its provisions those who practiced prior to 1893. It would therefore seem that for one practicing since that date, he not only could not charge or sue for his services, but he has committed an offense and under the statement of facts he would be liable to you for the loss of the animal.

Will Must Be Probated

Can I draw a legal will which does not require to be probated? I wish to leave a house to a grandson and a mortgage against my daughter and son-in-law to my daughter and appoint my son-in-law executor without bonds. If he is the executor, who releases the mortgage?—Subscriber, Orange.

Every will requires probate; this is especially true with real estate. A good form for a will has heretofore been given in these columns. The son-in-law can be appointed executor and under the decree of distribution in the estate the court decrees the satisfaction of the mortgage. This decree is made after all creditors have been satisfied.

Bees a Nuisance

I have a ranch set to vineyard and peaches; my neighbor has an apiary of a hundred hives; the bees do considerable damage to my crops. Can I force the beekeeper to move farther away or make good my losses?—Subscriber, Lakeside.

It has been held in many states that where bees become a source of annoyance and discomfort to the owner of adjoining property and impair the enjoyment thereof it becomes a proper case for a permanent injunction. The writer has been unable to find any case upon the subject of bees in this state, but the rules applicable to injunctions are plain and certainly should apply. The principal difficulty in respect to proving loss and damage

against the bee owner is in establishing that his bees did the damage; that being established, recovery could be has as in any other action of trespassing animals, for the actual loss caused.

Tax on Homestead

I have a homestead in Arizona upon which I submitted final proof in November, 1916, but have never received a patent. Is this land taxable before I receive my patent?—Subscriber, Upland.

When government land has been paid for and certificate given, or when the homestead settler has completed his prescribed term of residence and is entitled to his patent, nothing further remaining to be done and the actual equitable title thereto has passed out of the United States, the property becomes subject to taxation.

Community Fence

My neighbor has alfalfa and stock. I have an orchard and would rather not have a fence. Does law or custom require me to pay one-half of the expense of a line fence?—Subscriber, Turlock.

The provision of the law relative to the above point is as follows: Adjoining owners are mutually bound to maintain equally the fences between them, unless one of them chooses to let his land lie without fencing; in which case, if he afterwards encloses it, he must refund to the other a just proportion of the value, at that time, of any division fence made by the latter.

Foreclosure

A man and his wife own home worth $3500 with mortgage of $1000; also six vacant lots elsewhere. The man with an associate borrowed money from a bank on a joint personal note; the money was lost and the makers are unable to pay. When they gave in their property statement to the bank for the loan they had optimistic views with respect to property values. If the bank sues on the note can it seize the home or can the home be homesteaded? What, if any, effect would the optimistic values of the properties have?—Subscriber.

If the man and wife file declaration of homestead with the county recorder prior to the filing of an attachment by the bank the home will be held exempt from seizure. The lots, of course, can be taken. Except in any case where there was a deliberate attempt to defraud the bank by excessive valuations, or a statement of a fact which was untrue and known to be untrue, no difficulty will be experienced from that source, otherwise it would be a case of criminal prosecution.

Note Outlawed

A holds a note dated July 1, 1913, payable on or before one year after date with interest at seven per cent payable semi-annually. When does this note outlaw? Interest has always been paid, but nothing on the principal. Does that affect it? Could A force the payment of the note by legal action? If so, how should he proceed and what would it cost? The maker is a married man, school teacher and earning good salary. — Subscriber, Long Beach.

The note outlawed on 2nd day of July, 1918, being four years from the maturity date. Payments upon the note either of principal or interest, do not of themselves affect the running of the statute; the statute requires an acknowledgment in writing of the debt, signed by the debtor. The statute runs anew from such acknowledgment. Outlawed notes have many times been collected, but that is a matter for a specialist along those lines. The court fees would depend upon whether the principal of the note was under or over $300; under that sum going into the justice court, the fees would be $5.00 to $7.50; in the superior court approximately $15. Another thing, the earnings of a married man against such indebtedness are exempt from execution, if earned within 30 days from the date of the levy.

WHERE PINEAPPLES COME FROM

Continued from Page 417

into another tank of cold water to stop cooking. Tests are then made of all cans to determine if there are leaks, after which they are ready for the store room. The labels are not placed on the cans until they are ready for shipment.

From the time the pineapples are first brought into the factory until they are canned, they do not come in contact with the human hand at any point, the only time they are handled at all is on the sorting table, and here the workers are required to wear rubber gloves.

It was formerly the custom to discard the cores cut from the pineapples, but now these cores are packed separately, either whole or in big chunks, and they find a ready sale to candy makers who convert them into chocolated coated or glace fruit. These cores now constitute about five per cent of the entire pack, and the supply is not equal to the demand. The fiber of the core is coarser than the fleshy part of the fruit, and consequently hangs together better, which accounts for the preference shown it by confectioners.

Another by-product of the pineapple which is now being utilized is that of the juice. Formerly as much as 10,000 gallons of this juice were pumped into the sea every day. Now the juice is caught in troughs under the different machines and conveyed to a press, where the pulp is separated from the juice, the latter being pumped through aluminum pipes to a filter through which it percolates. It is then brought to a boiling point in a silver-lined vat, after which it is bottled, sealed and processed. As the juice contains about seven per cent of sugar it is not sweetened and makes an excellent beverage when served cold.

A firm of chemists has also been making elaborate experiments to develop a process for making sugar out of the waste pineapple juice. This sugar, a quantity of which has already been produced, is used in making the syrup required for canning the fruit, thus saving the cost of cane sugar.

The principal variety of pineapple grown in the Hawaiian Islands is the Smooth Cayenne, which has a flavor superior to any other.

The pineapple plant matures and bears 18 months after planting. When the first crop is cut, sprouts spring up between the leaves. Several of these are allowed to remain on the plant, the rest being cut. Those remaining on the plant produce a second crop in 12 months. Of those removed, the best are used to start new plants. The planting distances vary. From 2500 to 12,000 plants are used per acre. The closer they are planted the smaller will be the fruit, and in canning this is a decided advantage as less waste is had with the smaller sizes.

Next to the Hawaiian Islands the Singapore product is the best known. Until it was outclassed by the Hawaiian fruit, Singapore canned more pineapples than any other district in the world, but its product is not comparable in quality with that from the islands. There are about 14 factories engaged in canning pineapples in Singapore, practically all controlled by Chinese.

In contrast to the improved mechanical means installed in the Hawaiian factories, practically all of the Singapore produce is put up by hand, the equipment being of the most primitive kind. Large numbers of coolies squat upon the canning tables, preparing the fruit for canning. The various processes in the canning of the fruit is all done by hand, even the tins being turned out by primitive machines.

Be Sure to

VOTE

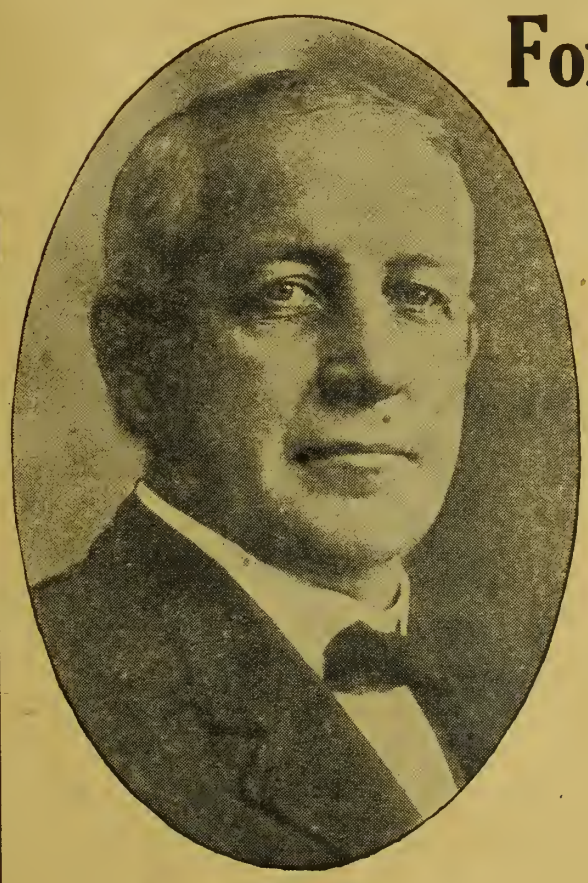
On November 5th

No farm work can be too pressing, no weather too bad to keep you from voting on Tuesday, November 5th.

If nothing else—your duty as a patriot and citizen should prompt you to visit the polls that Day.

The United Dry Forces of California ask your vote and active support.

For These Men



For Governor
WM. D. STEPHENS

Former Mayor of Los Angeles—then Congressman—Now Governor of California. As Congressman, he voted in favor of submitting the Dry Amendment to the Constitution of the United States; as Governor, he favors ratification of that Amendment.

For Lieut. Governor
C. C. YOUNG

Member State Assembly, 10 years; Speaker (Presiding Officer) of Assembly, 6 years. His record in the Legislature has been one hundred per cent good along temperance lines. Along all other lines he has been one of the most efficient men there.

If you favor the ratification by the Legislature of California of the National Dry Amendment—already ratified by 14 other states—we ask you to vote for Wm. D. Stephens and C. C. Young.

D. M. GANDIER, Secretary Ratification Committee

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Increase the Editorial Force

THE live stock industry is increasing in California as never before. The high feed prices and the discouragement which some dairymen have felt because of the rigid character of the state dairy law and some city ordinances has caused some to discontinue dairying. But cooperation, increasing demands and patriotism are overcoming obstacles, and even dairying is again coming to its own. It's growing.

So is the California Cultivator.

This growth is indicated by many steps recently taken, and now by the addition of one of the best live stock specialists, R. P. Royce, graduate of the University of the "Show Me" state, and for years with live stock department of the Missouri Farmer and for the past two years with the division of animal husbandry of the University of California, is now with the Cultivator. He will have charge of our Live Stock Department.

R. P. Royce

Mr. Royce has a vision of the future of this branch of California agriculture which adds to his enthusiasm and will make him a factor in the state's upbuilding.

The Cultivator has a most hearty welcome for him and believes the live stock men the state over will be equally as hearty.

Much of the time Mr. Royce will be "at home" to live stock men at the Los Angeles office of the Cultivator. The latch string is always out. But bearing in mind that the tendency of the times is "Service" we assure our readers the services of Mr. Royce are at the command of our readers at all times.

A Basis for Faith in the Live Stock Industry

By R. P. Royce

SINCE the beginning of the era of improved live stock there has never been a time when the industry attracted the attention it does at the present time—and certainly there was never a time when the producer of live stock could view the future with the confidence he is justified in feeling now.

Keen hard-headed men who have taken time to analyze the situation have found a solid basis for their faith. It goes without saying that the war has given a tremendous impetus to the business — but the statement may be ventured, that without the war as a stimulant, it would have taken only a few years longer to have brought about a situation closely paralleling the present.

To see the proposition clearly, it is necessary to go back a number of years to the time when the range country was invaded by the homesteader, and when land was cheap in the Middle West.

In the days of free grass and cheap corn, cattle, hogs and sheep could be produced very cheaply. Naturally, with unlimited range the industry expanded rapidly—faster than our population increased. Production costs were low, the supply greater than the demand, and selling prices low. Then began the invasion of the range and each year the lines were shortened. Finally a slow liquidation of range stock began. A few noticed what was happening and had courage to sound a warning. However, little attention was paid the prophets—as is usually the case.

As a matter of fact, a movement of tremendous importance was going on almost unnoticed. Our whole live stock industry was undergoing a readjustment in an effort to meet developing conditions. True our total live stock holdings were increasing, but the ratio between live stock and population was narrowing. All classes of live stock producers were beginning a systematic improvement of their herds and flocks in an effort to cheapen production through more efficient animals. At times it seemed that this improvement was slow, but really it progressed about as fast as the need developed. All the time the pure bred and high grade sires were winning their way and demonstrating the fact that their use was a business proportion with increasing values of land and consequent higher feed costs. The development was logical and would have continued—a bit slow, perhaps — with absolute certainty. But the war came and almost overnight the whole live stock industry was lifted to first importance. The demands made on the world's live stock have been so tremendous that we are just beginning to see what has happened and to appreciate the part live stock has played in the winning of the war. It has met every demand as best it could but at terrific costs.

According to the most recent figures issued by the food administration European herds and flocks have decreased 100,000,000 head. Belgium, Serbia and Rumania are practically exhausted of live stock resources. The Allies have decreased their live stock holdings by 45,787,000 head, while the Germans admit a decrease of 18,000,000 head — about one-third their normal supply.

Neutral nations show a reduction of nearly 1,500,000. The decrease in Austria, Turkey and Russia will increase the total losses to the 100,000,000 mark.

The total number of cattle, sheep and hogs in this country is 187,000,000 according to best estimates. Therefore it appears that Europe has already lost more than half as many meat animals as there are in the United States.

The war is not over, but if it ended tomorrow we would continue to feed Europe. Europe will look to this country until conditions somewhere near normal can be established—a question of years, at least. Not only will we be called on to furnish meat products, but there is not the slightest doubt but that we will be drawn on heavily, in the rebuilding of their herds and flocks. Such a statement is not a hazy prophecy—it is cold fact. There is no other source to which Europe can turn for seed stock. Not only will Europe be our customer but South American countries have already entered our markets.

What then of the future of pure bred live stock? No definite answer can be given the question but if a careful survey of the situation is made it would seem that the producer of any kind of live stock can find a basis for faith in the future of the industry.

The demand for better sires for use in our own herds and flocks is devel-

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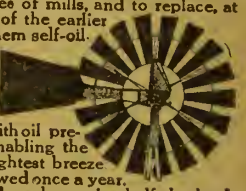

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oping rapidly and is reflected in the sale reports. Men know more about the business of production than ever. War conditions have forced them to consider the question of costs and they have learned the value of better blood. They know too, that this country must feed Europe for years after the war. With an assured demand for meat products the producers who have learned the lesson of good blood will furnish an outlet for all our surplus breeding animals, but he will find Europe, South America and Mexico competing against him.

As yet no real definite forecast can be made as to just how heavy the European demand will be—but there is not a man familiar with the situation who does not look with confidence to the future and who does not feel that the demand will touch all breeds of live stock.

It is not the writer's intention to urge that all our readers should enter the live stock game. Not every man can make a success with live stock. It is a business that requires intelligence, capital, hard work and a real love for the work in hand. For the man who can qualify the foregoing should furnish a basis for faith in the future.

A Pure-Feed Law Needed

California has the reputation of being one of the most progressive states of the union. It is perhaps true that this state has more progressive legislation in force than any other state. Our recent legislatures have shown a courage and a vision that is highly commendable, but there is one essential piece of legislation that we lack, a pure-feed law.

The need of such a law has been apparent for years. Other states have gone ahead of California on this question, and the time has come when the live stock interests of this state should demand that they be given the protection that such a law affords. Briefly the purpose of a pure-feed law is to require that all stock feeds offered for sale within the state be sold for just what these feeds are. In other words, a true statement of what each feed is, together with the analysis, must be attached to the sack or package. And a suitable penalty is provided for misbranding. Under such a law the buyer is protected against an inferior product. Obviously, the manufacturer of honest goods will not object to the operation of such a law. Only the manufacturer or dealer handling inferior or dishonestly branded feed would suffer. That there is need for such a law is evidenced by the fact that such a law was defeated in the legislature two years ago. Who brought about the defeat? The honest manufacturer? Hardly. The bill was killed because manufacturers of feeds that would not sell on their merits fought it. Consequently, California live stock interests have been at the mercy of these crooked manufacturers, and this state has been a dumping ground for feeds that could not be sold in states protected by a pure-feed law. Under existing conditions the buyer of stock feeds has no means of knowing what is in the sack , the chemical analysis or the feeding value.

Certainly such a law has long been needed. But there never was a time when legislation along this line was needed as badly as now, for the reason that there never was a time when so much mixed and prepared feeds were offered. Such a law would have saved a good many thousand dollars the past year.

But it is to the future we must look. Are the live stock interests willing to continue buying feeds without knowing what they are paying for? It is entirely up to the feeders. They can have the protection of a pure feed law if they want it.

There will be a bill, incorporating all the best provisions of the most successful feed laws of other states, introduced in the legislature this winter. The various live stock organizations are lining up behind it, but in order to insure its passage it will be necessary that every man interested in the live stock business support it.

See your representative and your senator, tell them that when this bill comes up you will expect their support. Explain to them the importance of enacting this legislation and then keep after them until the bill becomes a law.

The California Shorthorn Breeders' Sale at San Francisco Show

David J. Stollery, secretary of the California Shorthorn Breeders' Association, states that the consignment sale of Shorthorns, sponsored by that association, to be held during the California International Show at San Francisco, will afford an excellent opportunity for prospective buyers of Shorthorns to make selections from the leading herds of the state.

Thirty head of bulls and 20 females of different ages have been consigned. For the most part the sale will consist of Scotch cattle, representing the most desirable families. It might be well to state that for the past several years our Coast breeders have been quietly laying the foundations for herds that will, in every way, be a credit to this state. Some of the best bred Shorthorns the breed affords are now owned in California and much of this blood will be available in this sale. Another point that prospective buyers should keep in mind is this: Whatever they pay for this sale offering, they can feel certain that for the same animal in an Eastern sale a much higher price would be paid.

The character of the consignors is a guarantee of quality and reliability. Those who are contributing to the sale are: Hopland Stock Farm, Hopland; T. T. Miller, Los Angeles; Paicines Ranch Co., Paicines; T. S. Glide, Davis; W. M. Carruthers, Live Oak; Ormondale Farm, Redwood City; University Farm, Davis; Roselawn Farm, Woodland; Pacheco Cattle Co., Hollister; Jack London Ranch, Glen Ellen, and Chas. A. Trosi, Vinton.

Sues Imperial Valley Milk Association

The Milk Producers' Association, together with Harris Weinstock, state market director, and J. M. Henderson, Jr., were defendants in a test suit brought by Minnie Edwards of Holtville. The charge is conspiracy to violate the state anti-trust law and was brought to test the validity of the clause in the association's contract with members in which they are required to deliver their dairy products exclusively to the association.

The association was formed last spring with a membership embracing 90 per cent of the dairymen in the county. Only one creamery was able to remain in business and it appears that this creamery has been paying a higher price for butter fat than members of the association were receiving. This fact caused dissatisfaction among the members with the result that legal proceedings were instituted.

HOGS SOLD WELL AT HANFORD

The semi-annual consignment sale held by the Kings County Poland-China Swine Breeders' Association at Hanford October 9 resulted in the very satisfactory average of $90 on the eighty head sold. Hadley's Queen, consigned by W. L. Hagg & Son, Hanford, and purchased by Chas. A. Vaughn, topped the sale at $265.

Those who consigned to the sale were: M. Bassett, A. L. Bassett, W. Bernstein, John Bernstein, Dr. A. J. Crashaw, W. L. Hagg & Son, W. S. Hubbard & Son, H. D. McCune, Dimmick Bros., C. G. De Radd, E. G. Myer, F. D. Ross, Trewhitt Bros. and C. A. Vaughn.

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Second Sale
—OF—
HEREFORDS

Under the Auspices of the
Pacific Coast Hereford Association
Will Be Held at the
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Friday, Nov. 8th, 9.30 a.m.
40 Choice Bulls and Females

The offering will include about twenty-five choicely bred two and three year old heifers from Colorado, which will furnish an opportunity for our California breeders to increase their herds with some choice strains. There will also be offered three or four bulls of herd heading quality.

For Catalog Address W. R. MADDEN, Sec'y
Pacific Coast Hereford Cattle Breeders Association, Dixon, Cal.
Earl Gartin, of Greensburg, Ind., Auctioneer

Closing Out
DUROCS

Owing to ill health and scarcity of labor I am offering my entire herd of Durocs for sale, consisting of 13 tried sows, 8 fall yearling gilts, not bred, 2 bred gilts, 42 March gilts, 3 March boars, 2 aged boars, one yearling boar and 10 July pigs. These are all high class hogs, smooth easy feeders, and either registered or eligible to register. Many are high prize winners at the different fairs of the state. Any one who can handle the entire lot can get them for little advance on the market price.

Elmer Lamb
Ceres Cal.

Hauser's Digester Tankage
GIVES GREATEST VALUE FOR LEAST MONEY
IT MAKES THEM FAT
Hauser Packing Co. Los Angeles

HEREFORD AND SHORTHORN BULLS

Owing to the fact that a number of Western shows have been called off, I have decided to offer for sale a number of Shorthorn and Hereford bulls from my show herds. I have bulls of either breed that in point of breeding, individuality and quality are suitable to head first class herds. Here is an opportunity to select excellent bull material representing the choicest breeding to be found in the Middle West.

HEREFORDS

Seven junior and senior yearlings and two year olds, representing the blood of Perfection Fairfax, Disturber 4th, Beau Perfection, Beau Blanchard, and Bonnie Brae 3rd. These bulls have the size, bone and quality demanded by Western breeders, and the breeding back of them insures that they will give a good account of themselves in the breeding herd.

SHORTHORNS

Among the Shorthorns are a number of real herd bull prospects. Cumberland's Goods, a roan two year old son of Royal Cumberland 3rd is a very attractive prospect. The younger bulls are: Eminent's Dale by Matchless Dale, a son of Avondale, and out of a Butterfly dam. Royal Sultan by Sultan Mist. Golden Champion by Village Champion. Orange Fragrance by King's Choice.

I will be at the Liberty Fair and the San Francisco International and will be glad to meet all California cattlemen.

WILLIAN HENN

Kansas City, Mo.

Fred Hartsook RANCH

Lankershim, Cal.

ANNOUNCEMENT

During the past two years I have been engaged in laying the foundation for high class herds of Holstein cattle, Poland-China hogs and Toggenburg milk goats. In making my selections I have held closely to the highest standards of breed excellence. I have at no time permitted mere pedigree to influence my choice.

All who have inspected my herds have remarked on the uniformity, size and constitution noted. As to the lines of breeding represented there can be no improvement. It is with a real sense of pride that I make this initial announcement and I trust that all who are interested will visit my ranch and inspect my herds. My prices will be found very reasonable and I guarantee satisfaction.

HOLSTEINS:

I have recently put at the head of my herd one of the strongest bred bulls in the West, **Finderne Pieterje Fayne, Jr.** This bull is sired by **Finderne Pieterje Fayne,** who has over thirty 30-pound daughters. His dam has a record for 30 days of 133 pounds and his grand dam was world's record junior three year old.

Among the herd cows are daughters of Prince Gelsche Walker Korndyke, Juliana King of Rock, Allenvail Cornucopia Paul, Pietertje De Kol Alka Peterbas, Sir Johanna Aggie Lad, Woodcroft Sir Beets, Segis Sarcastic, and other prominent sires. Eighteen of my cows have been officially tested and hold records from 22 pounds to 26 pounds.

Choice Bull Calf for Sale

I am offering for sale a six months old calf sired by King Segis Pontiac Jannek, and out of a dam with a 22 pound record, made two months after calving. This calf is well grown, nicely marked and a good individual. He is being priced worth the money.

POLAND CHINAS:

My herd is headed by the noted boar, **I. B. A. Wonder,** reserve grand champion at the P. P. I. E. and at Sacramento, 1918. He is not only a remarkable show boar but a proven sire of first rank. My brood sows represent one of the choicest collections of breed, combining to remarkable degree, extreme size and quality. **Big Knox Girl,** reserve grand champion at Sacramento, is conceded to be the largest sow ever shown in the state. I have others of the same kind and the blood lines they carry represent the most popular and desirable breeding.

TOGGENBURG GOATS:

At present the herd numbers about 30 head of pure bred and high grade does, and is headed by the buck, Brigham Young, used in the University of California herd. That this buck is a producing sire is evidenced by the fact that his daughters are producing nearly 30 per cent more than their dams. I have recently added the Riverside champion doe and several other prize winners.

The Farm Labor Situation

By J. P. Dargitz

The labor situation as far as the farming interests are concerned seems to be at present reasonably good throughout all sections of the state except the Imperial Valley.

The walnut harvesting is in a position to utilize many more women and children and also men incapacitated for heavy labor. Probably Ventura and Orange Counties are mostly affected this way.

We would urge advising the walnut people especially to endeavor to employ women and children in their work and discourage as far as possible the employment of able bodied Mexicans or other man power. This will allow such labor to work in the beet fields and other work which can hardly be done by women or physically disabled men.

We are pleased to note that in Santa Ana the United States employment service representative induced some tomato growers to employ a contingent of the woman's land army for picking tomatoes in the field, and from the growers' report that the women did excellent work, picking more tomatoes than the Mexicans who had been previously employed. This is a source of labor that should be utilized more and more.

Mexican Farm Labor

Alien Mexican laborers can now be imported for agricultural work when necessary. If you feel the need of more farm labor, you should take the following steps:

Try to get the same in your own neighborhood. If you can not do this, then make application to the nearest free state employment bureau, or to the nearest United States employment service bureau.

If you do not know where these bureaus are, ask us and we will help you.

Failing in getting help through these channels, we will then ask the United States employment service for permission to import them for you.

In some cases we can furnish you with alien laborers who have finished some previous job in this state and are now available.

In every case advise how many men you need, the kind of work, the housing accommodations you have for the men, whether you can board the men or if they will be expected to board themselves, how long you will want them and what you will pay, contract or by the hour.

The imported men must be paid the going wage for similar labor in the community where employed, must be furnished living quarters of a sanitary character, fuel and water free; railroad tickets and living expenses must be advanced by the employer and withheld from wages, but if any have not worked out these advances when you are through with them, then we will undertake to place the men elsewhere and secure any such deficiency for you as an advance from the new employer.

Be particular to give full information as above and save time. Three weeks should be allowed us to get your help imported—more time is better.

Every imported man must be accounted for by you through us to the government. We are here to help you.

For further information address: J. P. Dargitz, Field Representative Public Employment Bureaus, Sacramento, California.

HENN'S SHORTHORNS AND HEREFORDS

William Henn of Kansas City, Missouri, has his Shorthorns and Herefords at Exposition Park, Los Angeles, waiting for the Liberty Fair to open. It takes nerve to bring out a show herd from the Middle West these times, but no one ever accused Mr. Henn of lacking nerve—at any rate, not since he successfully invaded the tick country a few years ago. However, Mr. Henn says he would rather brave the tick than the "flu." He came West expecting to make all the Western shows, but since the epidemic broke out all the shows have either been called off or postponed. For that reason Mr. Henn has decided to sell a few Shorthorn and Hereford bulls at private treaty. The bulls offered are either junior or senior yearlings or two year olds. Several of them are good herd bull prospects and a few are the kind that will attract the range man.

Among the Herefords, the two year old, Beau Banner 5th, is a very pleasing sort. Two grandsons of Perfection Fairfax are in offer, both are sired by General Fairfax. Two other attractive bulls are Beau Blanchard 51st, by Beau Blanchard and Disturber 11th by Disturber 4th.

Among the Shorthorns is the roan, Cumberland's Goods. This bull was grand champion at the Wyoming state fair. A younger bull, Eminent Dale, is by Matchless Dale, the bull that has sired more winning Shorthorn steers than any other bull.

NO BERKSHIRE SALE AT LOS ANGELES

W. M. Carruthers, president of the Western Berkshire Congress, states that it has been decided not to hold the sale that was advertised to be held during the Liberty Fair at Los Angeles. Mr. Carruthers says that the consignors have been so handicapped by a shortage of labor that they have found it difficult to present the offerings in the condition necessary to meet the high standard set by former congress sales and for this reason it was deemed advisable to abandon the Liberty Sale.

Veterinary Queries

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Unsigned communications receive no attention.

Itch

I have a mare that is bothered very much from an itch on her belly and back. She has been getting poor lately and I think it is caused by this itch. What can be done for it?—Subscriber, Bakersfield.

The irritation is probably caused by a small mite in the skin. Soak her all over with a solution of zenoleum. Use a teacup of the zenoleum to a bucket of warm water and do not miss a spot but do not get it in her eyes. Repeat the treatment every four or five days until you have made several applications. It would be better to clip the horse first so you could apply the solution direct to the skin. Fowler's solution of arsenic is good for skin diseases that are not due to mites in the skin. That should be given in ounce doses once a day and continued for three or four weeks. A quart of the solution would be a good amount to get and commence by giving half an ounce once a day for a few days; then one ounce a day until it is nearly all used and finish by giving half an ounce a day for the last few days.

Horse Thin in Flesh

We have a large horse that is very thin in flesh. He eats and drinks well but has been sick for three or four weeks. He seems weak and when he walks he partially drags his hind feet. Below his breast there was a large swelling, but that has spread and extends back on the belly. Please advise us what to do for him.—Subscriber, Chino.

The dragging of the hind legs is probably due only to weakness. You say he eats and drinks well. He probably eats too much. Horses as often grow weak for overeating as from any other cause. Feed him regularly but not too much. Get four ounces of the tincture of iron and every morning give him half an ounce of it in a pint of water as a drench. Also get these powders: Four ounces of nitrate of potash, two ounces of bicarbonate of soda, four ounces of powdered gentian, two ounces of powdered nux vomica and eight ounces of farina. Mix well and give a tablespoon of the mixture in the feed twice a day.

Believe Cattle Should be Sold by Grade

Written for California Cultivator by A. L. Spellmeyer

The high price of feed has resulted in a forced slaughter of cattle. While most of these cattle were fat, they lacked the high finish formerly demanded in a beef steer. A number of us, all in the stock business, were discussing the difference between the cattle market in California and the markets of the East. The big difference is that the California market operates on a one-price system, paying the same for any steer of any grade, if fat, whereas the Eastern market grades the steers and provides a margin between the top and bottom averaging around six cents.

I contend that the system and custom of California packers did not encourage live stock improvement, proper feeding or baby beef production. I also contended that the one price paid was based upon the lowest possible price they could pay and still prevent the shipment of cattle East, and that even so, there have been times when the California feeders have been able to stand the tremendous shrink incident to the ten-day trip to the Kansas City market, pay the high feed and freight bills and net more than was offered at home.

A former buyer for the packers argued that the California system was a better plan than Eastern system based on grades. He gave it as his opinion that the time would soon come when the highly finished steer would not be seen on the market. He insisted that so much good meat was worth just so much money, whether it was from a Holstein steer or from the best baby beef. He held that the extra finish and fat could only be put on by heavy feeding and that as a matter of fact the actual quantity of meat was not increased, nor was the quality improved, but that the increased weight was practically all fat put on at an unreasonable cost. He further believed that constructive breeding should aim to produce heavier cattle at the same age, rather than to make quality the basis for a higher selling price.

There is much to be said on both sides of such an argument, but for the encouragement of better stock, I favor a price based on quality.

A GREAT CATTLE SHOW AT SAN FRANCISCO

A preliminary list of beef cattle exhibitors, issued by the management of the California International Live Stock Show, to be held in San Francisco November 16-24, includes practically all the leading establishments of this state, and in addition many well known herds from other western states have made entries. The list of exhibitors announced follows:

Shorthorns—T. T. Miller, Los Angeles; Maxwell-Miller Cattle Co., Steamboat Springs, Colorado; J. H. Rossiter, Burke, California; Ormondale Co., Redwood City; Pacheco Cattle Co., Hollister; Roselawn Stock Farm, Woodland; University of California, Davis; Thos. B. Dibble, Santa Barbara; Jack London Ranch, Glen Ellen; T. S. Glide, Davis; W. M. Carruthers, Live Oak; Hopland Stock Farm, Hopland.

Herefords — John S. Painter & Sons, Roggen, Colorado; Hereford Corporation of Wyoming, Cheyenne, Wyoming; H. M. Barngrover, San Jose; W. D. Duke, Likely; J. A. Bunting, Mission San Jose; J. H. Cazier & Sons, Wells, Nevada; Chas. Rule, Jenner; University of California, Davis; Curtice Land Co., Calgary Alta; A. B. Cook, Helena, Montana.

Aberdeen-Angus — Congdon & Battles, North Yakima, Washington.

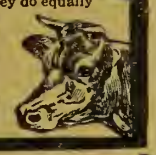
HOG PRICES TO CONTINUE

In a recent communication to Dean F. B. Mumford of the University of Missouri college of agriculture, who is food administrator for Missouri, Herbert Hoover states that prices for hogs farrowed this fall are not expected to be less than present prices. Mr. Hoover says:

"So far as we are able we will continue the assurance of a minimum $15.50 per hundred for average of packers' droves at Chicago for hogs farrowed this fall. We can reconsider the outlook in a few months as to the extension of this again to spring farrowing. I have little doubt that we will be able to continue. I do want it made clear in all these matters of price influence by the government that this is not a guarantee—it is a policy, and this policy will only be defeated by some unlooked for interruption in distribution, transportation or consumption—a risk of war we must all take."

JERSEYS

THE Jersey is an investment breed, not a luxury. They are noted as money-makers. They do not have to be pampered. They do equally well in Southern Texas and the Canadian Northwest. One Jersey will prove to you that you must have a herd. Write Dealers for prices and pedigrees. Send to us for important facts about Jerseys.



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Herd Headed by You'll Do Oxford's Lad
Write Us Your Wants
J. E. Wherrell
1581 Sedgwick St., Riverside, Cal.

Venadera Herd
REGISTERED JERSEYS
Young bulls from proven dams in Register of Merit
GUY H. MILLER
MODESTO, CAL.

ALL MY RECORDS are made under ordinary dairy conditions. The farmers cow is
The Jersey
YOUNG BULLS FOR SALE
C. D. HAYWORTH
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Young Jersey Bulls
FOR SALE
One at the head of your herd will pay big dividends on his cost. Write to
W. J. HACKETT
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Get One of My Jersey Bulls
to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glynllyn.
Visitors Welcome Correspondence Invited
A. A. Jenkins
R. R. Box 46 Tulare, Cal.

Hopland Stock Farm
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50 Berkshire Suckling Pigs eligible to registry, sired by Iowana Rival Majestic 194736, son of Rival's Champion 112500, and sons of Iowana Rival Majestic, at $12.50 weaned.
Registered Sows, Gilts, and Boars for sale.
San Francisco Office,
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4 Duroc Jersey BOARS 4
and some splendid gilts for sale
Fair Prize Winners. Write
W. M. Way Modesto, Route 1, Cal.

Holsteins Are Not Fussy

The Holstein cow is not a dainty creature as far as her appetite is concerned. Just head her up to rack full of not too good alfalfa hay and she manages to convert it into the finest milk and butter fat in the world—yes she will even eat that black, spoiled looking alfalfa that is so plentiful in California right now. And if by chance she can have a little of that $40.00 per ton barley to go along with it, why bless your soul, she responds as gratefully in production as though she expected nothing better.

You have the hay, perhaps some of it is black, and possibly you have some $40.00 barley, and to connect them up with the right kind of registerel Holstein cows and heifers come to

THE FIRST TULARE SALE
Tulare, California
November 20-21, 1918

when a total of 125 head consigned by ten consignors will be sold without reserve or limit to the highest bidder at public auction.

There will be cows and heifers with official records up to over 26 pounds butter in seven days.

Cows and heifers out of dams with official records up to over 31 pounds butter in seven days.

Daughters of such splendid sires as King Korndyke Sadie Vale; King Korndyke Sadie Vale 22nd; King Korndyke Sadie Vale 27th; Prince Gelsche Walker; King Mead of Riverside; King Korndyke Pontiac; Spring Farm King; King Segis Pontiac Jannek; Merci Lad Korndyke Burke; King Segis Pontiac; Spring Farm King Pontiac 5th; Sir Aaggie De Kol Acme; Sir Skylark Ormsby Hengerveld; King Segis Lad; It State Bells; Finderne Pride Johanna Korndyke; Beauty Pietertje Butter King, Jr., Arcady Pontiac Wayne Hengerveld; Fidessa Thorn; Sir Veeman Korndyke Pontiac; Segis Pontiac De Kol Burke Luit; Mutual Fobes Longfield De Kol; Judge Hengerveld De Kol 6th; and others of notable breeding.

And the Females Are Bred

to the largest number of high record sires ever represented as reference sires in a western sale, including two bulls out of 40 pound dams, one out of a 36 pound dam, three out of 35 pound dams, one out of a 32 pound dam, and two out of 30 pound dams, besides several of exceptional yearly record backing.

THREE BULLS OUT OF 30 TO 31 POUND DAMS, one out of a 29 pound dam, one out of a 28 pound dam, a son of It out of a 27 pound four year old daughter of King of the Pontiacs, a son of King Mead of Riverside out of a daughter of Ignaro De Kol that made over 29,000 pounds milk and 1077 pounds butter in one year, head a list of bulls that should attract the attention of dairymen and breeders throughout the entire west.

CONSIGNORS:

ALEX WHALEY, Tulare.
E. G. WHARTON, Tulare.
W. J. HIGDON, Tulare.
CHARLES YOCUM, Tulare.
R. C. STURGEON, Tulare.
A. W. MORRIS & SONS, Woodland.
BRIDGFORD COMPANY, Knightsen.
R. F. GUERIN, Visalia.
W. F. MITCHELL, Visalia.
C. L. HUGHES, Sacramento.

Management
California Breeders Sales and Pedigree Company
J. M. Henderson, Jr., President C. L. Hughes, Sales Manager
Sacramento, California.
Auctioneers—Col. Ben A. Rhoades; Harold B. Rhoades.

POSTPONED

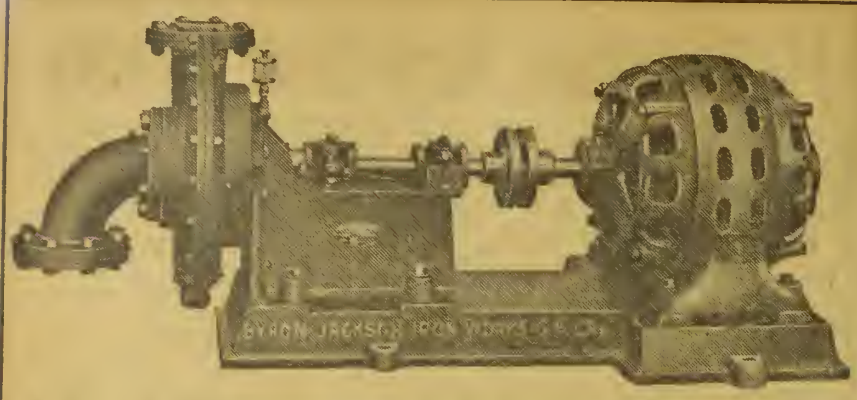
Will Open November 16th

As a matter of Public precaution, and after consultation with the Board of Health, the California International Livestock Show has been postponed. It will open November 16th and conclude November 24th.

Exhibitors who desire may send their animals at any time; the show is now ready to care for them.

For Complete Information Write
Joseph E. Painter, Manager,
1205 Merchants Exchange Bldg.,
San Francisco

California International Live Stock Show
San Francisco Nov. 16 to 24



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"Byron Jackson" Pumps meet every water condition

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Come to Stanislaus County for Registered Holsteins

STANISLAUS COUNTY LEADS

All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

Segis Pontiac De Kol Dutch
Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. E. E. Freeman, Rt. B, Modesto

HOLMES STOCK FARM
Registered Holsteins of best breeding. Young bulls for sale.
R. L. Holmes Modesto, Cal.

When you buy why not buy the best? We have it in Stanislaus.

Thompson's Registered Holsteins
Young bull calves for sale with yearly record backing.
Luther Thompson, Rt. A, Box 351, Modesto Cal.

KOUNIAS REG. STOCK FARMS — HOLSTEIN-FRIESIANS — BERKSHIRES

Our Senior Herd Sire is KING KORNDYKE HENGERVELD ORMSBY 7th
Five of his sisters sold at public auction for $23,800, an average of $4760.
This blood has made some of the world's greatest producers.
Our junior herd sire is TOYON KING KORNDYKE SOLDENE, son of a 33.23 pound daughter of King Hengerveld Aaggie Fayne.
Young bulls for sale. No females.
REGISTERED BERKSHIRE BOARS, sons of the $1500 boar Star Leader, for sale.
Kounias Registered Stock Farms, Modesto, Cal.

Grand Champion Boar **Grand Champion Sow**
Sacramento State Fair

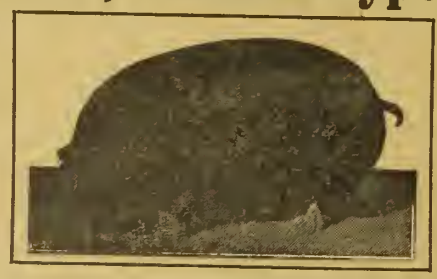
Berkshires

Forty-three of our litters this year averaged ten to the litter. We sell foundation sows and boars to head your herd from our easy keeping, heavy producing strains. Write to

JAMES MILLS ORCHARDS, Hamilton City, California

Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, $2145 cash awards. Write to



M. Bassett

Hanford, Kings County, Cal.

Alfalfa Seed

Common Variety 21c. per lb. **Smooth Peruvian 30c. per lb.**
Hairy Peruvian 40c. per lb.

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Delivery to You by Prepaid Freight

Delay Buying Until You Have Compared My Samples With Seed Others Offer

E. F. Sanguinetti Yuma, Arizona

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

Field Notes from the Live Stock Men

Hartsook Buys Promising Bull

Fred Hartsook, Lankershim, California, whose recent purchase of Poland-China hogs and Holstein cattle have put his herds at once in the front ranks, has just received an eleven-months-old bull calf from John L. Smith of Spokane, Washington. This youngster, Finderne Pieterje Fayne Jr., is one of the strongest bred calves brought to this state. He was sired by Finderne Pieterje Fayne 98104, a bull with 30 30-pound daughters, and his dam is Bonnie Lass Pauline, a 133 pound 30-day cow that was third in class at the National in Chicago. His paternal grand dam was the world record junior three year old. His sister was grand champion at the Chicago National and grand champion at the P. P. I. E.

It is rumored that several Los Angeles breeders are forming a company to purchase a part interest in this bull.

McFarland Ayrshires Go East

E. B. McFarland, San Mateo, reports the sale of seveuteen head of Ayrshires to the Gossard Breeding Estates, Martinsville, Indiana. Included in the lot was a young bull for which Mr. McFarland had refused an offer of $2500.

High Prices for Toggenburgs

During the fair at Riverside L. C. Buhl, Upland, sold three Toggenburg yearling does to Fred Hartsook, Lankershim. Included in the sale was the champion, Melbaline 1975 and the price paid for three was $1500. Mr. Hartsook also purchased two yearling Toggenburg does from S. L. Gregg, Redlands.

Decline in Stock on Farms

On about 5000 representative farms scattered throughout the United States, reporting to the Bureau of Crop Estimates, the decline in the number of cattle was 0.8 per cent from last July 1 to August 1, 2.9 per cent in hogs, and 3.3 per cent in sheep.

High Prices for Geldings

It is reported that in England third-class draft geldings sold from 90 to 120 guineas—$450 to $600. In France prices of $600 to $1000 are not rare.

Death of Woodford

The Hereford bull Woodford, head of the Hereford Farms herd, owned by E. H. Taylor of Frankfort, Kentucky, was burned to death in a fire that destroyed one of the barns at that famous farm. Woodford was conceded to be one of the truly great bulls of the breed. An offer of $50,000 was refused for him last year.

McFarland Hog Auction

At the recent auction sale of hogs held at McFarland under the management of the Tri-County Marketing Association, 233 head sold for $8457.25. The price paid was $17.50 per hundred.

Releases Straw

The federal live stock commission of the food administration has issued a statement to the effect that it will not be necessary for farmers to continue the conservation of straw for feeding purposes.

First Exportation of Percherons

The Percheron Society of America announces that the first exportation of Percherons to cross the Atlantic is on the way to England. For nearly 70 years the best that France produced came to America. The end of the war will find this country and Canada the only sources of supply for Percheron and Belgian breeding stock and that our breeders can look for a broad world market is indicated by the initial shipment to England.

It is interesting to know that the war has served to impress English and Scotch horsemen with the fact that a clean legged horse is more efficient than one sporting a mop of feather.

The English order was filled by George Lane of Alberta and consisted of 26 mares and one stallion.

The National Swine Show

The third National Swine Show was held at Cedar Rapids, Iowa September 30-October 5. About 1300 head of the leading breeds were on exhibit. Hampshires numbered 365, Poland-Chinas 247, Duroc-Jerseys 244, Chester Whites 220, and Berkshires 100 head. The Spotted Poland-Chinas, Tamworth and Yorkshire breeds were also represented. The total number of entries was practically the same as registered at the two preceeding shows.

The principal awards were: Poland-Chinas; senior grand champion boar, Black Prince, W. J. Graham, Howard Lake, Minnesota; junior champion boar, Expansion King, V. E. Robinson, Morton, Illinois; Senior and grand champion sow, Josephine 1st, Chas. E. Lyden, Manning, Iowa; junior champion, Liberty Girl, M. C. Brown & Sons, Martinsville, Ohio. Duroc-Jerseys; senior and grand champion boar, Great Orion, E. M. Kern, Stanton, Nebraska; junior champion boar, P. C. Orion King, Pine Crest Farm and Jackson, Charleston, Mississippi; senior champion sow, Long Gano, E. M. Kern; junior and grand champion sow, P. C. Orion Lady A., Pine Crest Farm and Jackson.

Chester White; senior and grand champion boar, Wildwood Prince Jr., Maurice F. Black, Scribner, Nebraska; junior champion boar, William 4th, W. T. Barr, Ames, Iowa; senior and grand champion sow, Miss Lenora 4th, W. T. Barr; junior champion sow, Sept. Lass 1st, H. A. Derenthal, Wykoff, Minnesota.

Berkshire; senior and grand champion boar, Royal Superbus 4th, W. S. Corsa, Whitehall, Illinois; junior champion boar, Royal Matchless 15th Rodgers Bros., Harrodsburg, Kentucky; senior and grand champion sow, Superb Premier Princess, Piping Brook Farm, Greenwich, Connecticut; junior champion sow, Matchless Beauty 19th, Rodgers Bros.

Hampshires; senior and grand champion boar, De Kalb's King 160th, H. De Kalb, De Kalb, Iowa; junior champion boar, Wickkare Imperial, Wickfield Farms, Cantril, Iowa; senior and grand champion sow, Trixie Lookout, Wickfield Farm; junior champion sow, Hawkeye Lady, Clayton Messenger, Keswick, Iowa.

A $60,000 Jersey Bull

A one-half interest in the yearling Jersey bull, Financial Sensation, has been purchased from the Waterloo Jersey Farm, Waterloo, Iowa, by Greystone Jersey Farm, Inc., West Chester, Pennsylvania, for $30,000. The basis for this price was found in the breeding back of the bull. It is claimed that Financial Sensation carries a greater concentration of the blood of the great cows, Interest, Finance, Financial Countess and Financial Beauty, together with more of the blood of the famous sires, Financial King, Sans Aloi, Financial King's Stockwell and Financial Countess Lad, than any bull of the breed.

University Distributes Sheep

Prof. R. F. Miller of the University of California, cooperating with the farm agents of the state has distributed about 1000 old ewes to farmers who plan to carry small flocks.

The University of California believes that there are thousands of small ranches in the state that can profitably carry a small flock of sheep. Most of the ewes distributed are five or six years old, but are carefully selected and only good, strong, straight fairly good mouth ewes are sent out. The plan is resulting in saving for wool and lamb production ewes that would otherwise be sent to market.

OUTLOOK FOR HOGS

The California hog producer can view the future with considerable assurance this fall. A year ago he faced an unstabilized market and skyrocketing grain prices. Many producers were forced to close out their breeding herds, or at least restrict their operations. The hog feeding game was in a bad way throughout the country, but local conditions placed a heavier handicap on the feeders of this state than was perhaps carried by feeders in other sections.

At best the California markets have been unsatisfactory. The margin between Coast prices and Middle West prices has always seemed too wide. Last winter the live stock commission of the federal food administration for California effected an agreement between the Coast packers in which it

was agreed that the prices paid on Coast markets would not be less than one cent under the food administration minimum effective in the Chicago market. It was further agreed that such a policy would remain in operation "for the period during which similar minimums are in force in the Middle West." This agreement applied to pigs of 1918 farrow.

Quite recently the food administration and the packers, in conference at Chicago, agreed that the October price on that market would be based on a minimum of $18, and that a joint meeting between the packers, growers and the food administration be held at Chicago between October 20 and 25 for the purpose of determining the November minimum. It is assumed that the same plan will be followed in establishing prices for December and subsequent months. It is further stated that the packers have agreed to avoid fluctuations to exceed 50 cents per cwt. weekly.

It would seem, therefore, that the coast markets should follow within one cent of the eastern prices. Such being the case, and with the price of barley around $2.25, hog growers should have no ground for complaint. With finished hogs around $17 to $18 and barley selling at $2.10 to $2.25 the hog business should go forward. Under the condition outlined the hog furnishes a highly satisfactory market for barley.

There is at present no ground for expecting hog prices to go much lower than the present range. The producers responded effectively to the government's plea for increased production, but this increase will be more than absorbed by European and army and navy demands. This country and every European country is on short pork rations now and while the war lasts, and later when peace comes, the demand for pork and pork products will continue. The government is calling for increased production for 1919. Last year California did not register her expected increase, but there were extenuating circumstances—an artificial barley market forced a liquidation. But this year conditions are different. A stabilized market and barley at a price that can be fed should furnish the necessary increase. Therefore every sow should be bred this fall—and bred to a pure bred boar.

Cattle Conditions in Arizona

Written for California Cultivator By A. L. Spellmyer

It may be of interest to know that many thousand cattle are being shipped from the Holbrook, Arizona, vicinity, because of a shortage of winter feed. It is probable that 20,000 head will be moved East and West. The movement is made up very largely of young breeding cows, heifers and calves. Ninety per cent of them are good colored Whitefaces. Most of the steers are sold. Some shipments have gone to Kansas City and some to Colorado. A number of outfits wanted to ship West but either could not find the feed or could not secure releases from local mortgages.

The she-stuff moving now is carrying enough flesh to be taken as canners, and canner prices realized at Kansas City have been mostly under six cents and some under five cents. Figuring freight and shrink it means less than four cents at home. With canned meat retailing at 45 cents per pound the greed of the killer is shown.

In many parts of our range country we see hides on fences, corrals, etc., which cow men will not bring in for present hide prices, which are less than prices four years ago, by ten ten cents per pound. At the same time leather is more than double.

With cattle, on ranges not drouth affected, bringing less than they did four years ago, except on large steers and fat stuff, with expenses doubled, and with breeding stock being sacrificed, the possibility of loans through the war finance corporation will be salvation to many cattlemen.

Many of these men must sell at home or ship to Kansas City. Local banks demand their money and these men have to dig it and haven't the money with which to pay freight or contract feed.

Conditions of this nature are deplored by anyone who understands the need for producing cattle, but a sacrifice is being made right now in Arizona and other states that will require years to overcome.

Old man Shylock had nothing on men whose actions indicate that they do not consider their country or their neighbor. I am not complaining because I am hurt. My ranch is not in the drouth district and I have no loan being called, but it would seem only fair play and good business for the packers to pay the cattlemen a fair profit and allow them to exist. It would also seem that the banks could carry their cattle paper and help their customers hold their stock until some government help can be secured. We must have cattle and our breeding stock must be conserved.

Most of the reported increase of cattle in Arizona is not an actual increase but results from closer counting, reporting, etc. We know California has no over-supply of cattle and will be short when grass comes.

I think a good many of us would welcome control from the new born calf to the meat on the table.

EXAMINATION FOR FOREST RANGERS

An examination for the position of forest ranger (male) will be held on October 28 of this year at Fresno, Los Angeles, Red Bluff and Sacramento. It is hoped that numbers of applicants will present themselves, because the forest service has felt the effects of the two drafts as keenly, probably, as has any private corporation in the state. Exemptions, in this service, are reported to be extremely scarce. Applicants must have reached their twenty-first but not their fortieth birthday. The entrance salary, in this state, is $1100.

THE LIFE OF A TRACTOR

The life of a tractor cannot be properly expressed in years alone. The tractor is a machine, and like all machines, its life depends on the amount of work it does and on the care taken of it.

This life can be shortened by lack of proper care and by abuse in operation. The number of years a tractor will be available for work on a farm, therefore, depends only partly on the hours it will be required to work each year, but if the machine is given proper care, both when idle and when in use, the amount of work done per year will be the principal factor in determining its length of useful life.

The life of a small tractor properly handled and properly taken care of when not in use should be sufficiently long to more than pay for itself and leave its owner a good profit in dollars and cents and in time saved.

THE APPAREL DOESN'T ALWAYS PROCLAIM THE MAN

First Officer (in spasm of jealousy) —"Who's the knock-kneed chap with your sister, old man?"

Second Officer—"My other sister."—Punch.

Negro Sergeant — "When I say ''Bout face!' you place de toe of yo' right foot six inches to de reah of de heel of yo' left foot and jus' ooze aroun'."—Boston Transcript.

Economy Stock Powder

Not a stock food, but a medicine. No salt, no oilmeal, no mill sweepings. Not a cure-all, but a genuine conditioner. Helps thousands of the best breeders and hog-raisers in the country raise profitable hogs.

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HEREFORDS

ALAMO HERD
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Registered Herefords
Herd and range bulls reasonable. Largest Hereford herd in California.
W. D. DUKE, Likely, Modoc Co., Cal.

Hereford Farms
Geo. Watterson, Owner
Bishop, Inyo County, Cal.
Anxiety, Repeater, and Bonnie Brae breeding. Bred and raised on mountain range.

HEREFORDS

A large herd of selected stock to choose from.
Everything sold is guaranteed as represented.
Why send East for breeding stock when we can supply your needs?
Save time and money by writing us for particulars.
Cottrell & Packard, Tempe, Arizona
Members Pacific Coast Hereford Breeders Association

LONE STAR HEREFORDS
Registered Herd **Unregistered Herds**
800 Cows and 50 Bulls Best of Breeding Show Winners. 4000 Head Both Sexes Same Breeding as Registered Herd
All stock guaranteed as represented. Write for terms and particulars. We offer for immediate delivery, 200 two year old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.
Scharbaur & Eidson, Midland, Texas Elevation 3000 Feet

FIRST TULARE SALE
125 Registered Holsteins 125
Tulare, California, November 20-21, 1918

A Very Large Percentage of the Cows and Heifers in this Sale Are Bred to these Bulls:

KING MORCO ALCARTRA, son of Tilly Alcartra, the greatest dairy producer in the world.

KING KORNDYKE PONTIAC 20TH, son of the 36 pound junior three year old, Miss Valley Mead De Kol Walker.

KING SADIE VALE IDYLE SEGIS, by King Korndyke Sadie Vale 27th and out of a 35 pound junior four year old daughter of King of the Pontiacs.

SEGIS PONTIAC ABBEKERK, by Segis Pontiac De Kol Burke and out of a 35 pound daughter of Changeling Butter Boy.

SIR AAGGIE DE KOL ACME, son of the 35 pound cow Aaggie Acme of Riverside 2nd, whose strictly official record of 1331.41 pounds butter in one year is a world's record.

KING IGNARO MEAD, by King Mead of Riverside and out of a daughter of Ignaro De Kol that made over 29,000 pounds milk and 1077 pounds butter in one year.

IT STATE BELLS, who is by the noted sire It and out of a 27 pound four year old daughter of King of the Pontiacs.

PRINCE HISKE WALKER, who is full brother to the 34 pound junior four year old. Lady Hiske Walker.

PRINCE RIVERSIDE WALKER, who is by Prince Gelsche Walker and out of the same dam as Aaggie Acme of Riverside 2nd.

The sale of this splendid group of 125 high class registered Holsteins will be the dedication sale of the new sales pavilion built by Tulare Livestock Association, and especial efforts have been made by all breeders concerned, to offer cattle of unusual excellence in this sale.

THE FEMALES IN THIS SALE ARE BRED TO MORE HIGH RECORD SIRES THAN HAVE BEEN OFFERED IN ANY SALE, WITHOUT A SINGLE EXCEPTION, IN THE WEST.

CONTRIBUTORS:

W. J. HIGDON, Tulare.
ALEX WHALEY, Tulare.
R. C. STURGEON, Tulare.
E. G. WHARTON, Tulare.
CHARLES YOCUM, Tulare.
R. F. GUERIN, Visalia.
W. F. MITCHELL, Visalia.
BRIDGFORD COMPANY, Knightsen.
A. W. MORRIS & SONS, Woodland.
C. L. HUGHES, Sacramento.

THE FEMALES:. Include daughters of King Korndkye Sadie Vale; Sjring Farm King; King Segis Pontiac; Sir Skylark Ormsby Hengerveld; Mutual Fobes Longfield De Kol; Sir Veeman Korndyke Pontiac; Judge Hengerveld De Kol 6th; Arcady Pontiac Wayne Hengerveld; King Segis Lad; King Pontiac De Kol Burke; Beauty Pietertje Butter King, Jr.; King Mead of Riverside; Sir Aaggie De Kol Acme; Segis Pontiac De Kol Burke Luit; Spring Farm King Pontiac 5th; and others of rich breeding.

THE BULLS: Include King Ignaro Mead, by King Mead of Riverside and out of a daughter of Ignaro De Kol that made over 29,000 pounds milk and 1077 pounds butter in one year; It State Bells, sired by It and out of a 27 pound four year old daughter of King of the Pontiacs; two sons of 30 pound cows, sired by 30 pound sons of King Segis Pontiac Alcartra; and others by great sires and out of dams with records up to over 29 pounds butter in seven days.

EVERY ANIMAL IS POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OF AGE TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST.

Catalog in preparation. Write for one.

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Auctioneers: Col. Ben. A. Rhoades; Harold B. Rhoades, Los Angeles.

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SNOHOMISH COUNTY, WASH. FARM LANDS. The greatest proposition on the market for the man who wants a farm; 12,000 acres to select from, 3½ miles salt water front, 20 miles of Beautiful Lake Shore, good towns, railways, steam boats, factories, mills, schools, churches, paved roads; where the largest profits are made, where the great variety of crops and wonderful productive climate make it the most productive farm section of America. Good lands in good localities as low as $25 to $35 per acre; 10 yearly payments; send for maps and literature to the BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

Little Suburban Farms—Raise goats, cows, vegetables and all kinds fruits, berries, etc. Lamanda Park and vicinity and San Gabriel Valley. Our specialty is territory around Pasadena, Baldwin Park, El Monte, San Gabriel, Sierra Madre, Arcadia, Monrovia, close in San Gabriel Valley. Out of doors is the life to live in Southern California. Any indoor job is bad enough. You are invited to inspect our water system on our ranch one mile south of Baldwin Park on Boulevard, in walnuts and alfalfa. Vanderhoof Investment Co., Vanderhoof Block, owners lots, homes, acreage, store buildings, Lamanda Park, Cal. 2566 E. Colorado St.

STATE FARMS FOR SETTLERS
Thirty-one farms and five farm laborer's allotments in the State Land Settlement at Durham are now open to the inspection of intending settlers. Applications will be received up to noon, November 20, 1918. For particulars regarding prices, terms of payment, address George C. Kreutzer, Superintendent. Durham, California.

For Sale or might rent, 80 acres improved 7 miles west of Bakersfield. Plenty water, shallow lift, buildings, fences, good soil, intelligent work will raise any crop including cotton, $150 per acre. Owner, W. F. Marks, 226 South Main St., Los Angeles. Phone Main 1499.

Sacrifice Sale—Alfalfa and dairy ranch about eight acres in new developing section of Escalon. Good rich soil. Fine location. Price, including over $2500 in stock and farming tools, if sold this month, $23,000.00. Owner, A. Rice, Escalon, California. Phone 9F21, Escalon.

A Three Thousand Bird Capacity modern ranch. Gas, electricity. Furnace in house. Well. Los Angeles eleven miles. Wetherbee Ranch, Lankershim, California.

For Sale—35 acre river bottom farm in Victor Valley. Box 74, Victorville, California.

RABBITS

SPECIAL
Flemish Giants and Long-haired Black's both the largest rabbits known and both fur and meat stock. Also a fine line of New Zealand and Belgian Hares. Guaranteed stock shipped anywhere. Write for particulars. PINE RIDGE RABBITRY, L. J. DOBBINS, Monterey, Cal.

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150 New Zealand Reds and Flemish utility does and bucks now ready for breeding, also 25 bred does, some with litter now. Better order now if you want to get good stock and save money. J. L. Olsen, 13506 Erwin St., Van Nuys, California.

For Sale—Rabbits. New Zealand Reds, extra large, fine color, none better, all young stock. $2.50 to $5.00. Order from this ad. Mrs. Emanual Smith, Etiwanda, California.

For Sale—New Zealand Red, Utility and pedigreed stock. Reasonable prices. Stephen E. Banneck, 330 E. North Hicks Street, Los Angeles, California.

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Wanted 1000 cotton pickers; come at once. Season lasts till February. Pickers can make from $4.00 to $8.00 a day. Steady work, no rain, mild climate; good opportunities for right parties. Pickers' camp on ranches where employed. Myron L. Watson, growers' labor agent, Blythe, Palo Verde Valley, California.

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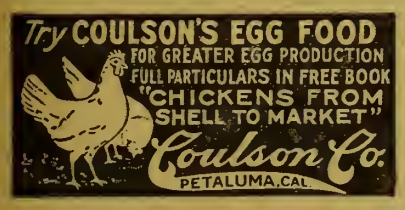

CHICKENS SICK? Roup, Cold, Canker, Bowel Complaint, Limberneck, Sorehead, etc. the best remedy is always GERMOZONE. At most dealers or 75c. postpaid with 5 book poultry library free. GEO. H. LEE CO., Dept. 418 Omaha, Neb.

BRITAIN RATIONS POULTRY FEED

Great Britain has adopted the rationing of poultry. A daily ration of four ounces per bird will be provided for birds of the best utility breeds up to an aggregate amount of 50,000 tons of feeding stuffs for six months. Although this seems generous, it must be remembered that the birds qualifying for the four-ounce ration are those which, under careful breeding and selection, have reached a high standard of egg production. The rationing scheme reacts to the advantage of the country, because it means the survival of the best fillers of the egg basket.

Owners of hens and pullets hatched since January 1, 1916, and not receiving rations under the four-ounce plan, may obtain certificates entitling them to purchase a specified amount per head per day. This ration is to be fixed from time to time according to the quantity of foodstuffs available. It will, of course, always be less than four ounces.

In order to obtain the special ration of four ounces per day—half grain and half a dry mash—fowls will be classified into first grade and second grade breeding stock. To come within the first category, fowls must be utility breeding stock for egg production or of high utility quality and of pure-bred stock. The standard of health must also be high. For a period of at least two years the stock must have been bred selectively to meet the above requirements.

Second-grade birds, which must be bred from proved layers, will receive rations only after the requirements of the first grade have been satisfied. A fair proportion of the allotted feed will be reserved for the best utility stocks of ducks, turkeys and geese.

This information, received recently by the United States food admnistration, emphasizes the value in war time of well-bred farm poultry, for the British rationing plan practically decrees that hens must lay to live.

The third contest of the All Northwest Egg Laying Contest will begin November 5, 1918, ending November 4, 1919. It will be held at Washington state college, Pullman, under direction of Helen Dow Whitaker.

When a Hen is Sick

Written for California Cultivator By Jean A. Koethen

FALL is the season when various diseases, more or less serious, are likely to appear among chickens. Foggy nights, changeable weather and lowered vitality because of the molt are all contributing causes of sickness, but side by side with them we must put the fact that the two worst scourges among poultry diseases, roup and chicken pox, are distinctly fall diseases. Roup is not as prevalent in Southern California as in climates where there is more rain, but our climate, "poultry paradise" as it has been called, is just the climate chicken-pox likes, and we are already beginning to hear of outbreaks in some sections. Then there are other diseases of damp weather, such as rheumatism, bronchitis, and the ordinary cold which is not bad enough to be called roup, but which nevertheless demands attention. Another disease one hears of now and then, not peculiar to fall, though it may develop more rapidly then, is tuberculosis, or what is commonly called "going light." I do not care to speak here of the occasional and sporadic diseases which take a hen now and then out of the flock, such as poisoning and digestive ailments, but will confine myself to those which are apt to be epidemic.

The first thing to do when a hen is sick is to find out what ails her. This is not nearly so difficult as it sounds. Every epidemic disease has its unmistakable symptoms. Digestive diseases are harder to diagnose. It is difficult sometimes to determine whether a hen has indigestion or an overworked liver, but roup and chicken-pox are unmistakable in their most casual appearance.

When a hen acts droopy, look first at her head. If there is a discharge from the nostrils, swelling about the eyes, or they are stuck together, she has some sort of a cold. It may be merely catarrh, and again it may be roup. Take her away from the rest of the flock, at any rate. If there are sores or scabs of any sort on head or comb or wattles, better call it chicken-pox and be done with it. Sometimes cases of chicken-pox have roupy symptoms—in fact, there seems to be some question among authorities whether roup and chicken-pox are not essentially the same disease. As long as there are only the sores or nodules on the head the birds do not appear very ill, and usually recover inside of three weeks. When the disease takes on a roupy character as well, the eyes are often affected, sometimes being stuck tight so that the bird can not see to eat, when death is likely to ensue from starvation. Sometimes the disease reaches the mouth and throat, when it is even more serious.

Tuberculosis has two symptoms, but they do not always appear in the same bird. There is always what is called "going light." The bird gets thinner and thinner, without apparent reason, until it finally dies. Very often lameness is connected with tuberculosis, but not always. When a hen goes lame, lift her. If this does not satisfy you, weigh her. If she is greatly under weight as well as lame, tuberculosis is to be suspected. If she is fat, her lameness is due to rheumatism. An experienced poultrywoman on whom I called recently, told me neighbors of hers were troubled with their chickens "going light," but laid it to worms. There need be no confusion in such a case, for if there are worms they may always be found by examination of the droppings. If worms are not seen do not doctor for them.

Having determined what ails the sick fowl, the next question is, what caused the illness. We can do little toward a cure until we do know the cause, for the cause must be removed before a permanent cure is possible. Especially is this true in the case of roup. When damp or chilly weather is often apparently responsible for outbreaks of this disease, the poultry house must be examined for the real cause. Are the birds getting fresh air at night? Go to their house after dark and see. Naturally, the air of no poultry house can be free from odor, but there is a difference between the foul odor of a crowded house in which there is only a little oxygen for a good many hens and a well ventilated house where the number of hens is so small and the circulation of air so sufficient that each hen has reasonably fresh air. The more closely crowded the house the more ample must be the provision for ventilation. Hens that breathe fresh air at night are not likely to have roup. If they do, the cause must be looked for elsewhere. If the house is on low ground with higher ground near, it may be water has run down into the yards or house and has been allowed to remain there. After a rain a dirt floor is often damp, and extra circulation of air must be provided to prevent the gathering of mold. Rain dripping through a leaky roof or damp winds blowing through a neglected crack have often brought on colds, sometimes bronchitis and sometimes roup. See to it that the hens have dry quarters and fresh air and there will be a minimum of roup and colds.

Chicken-pox, on the other hand, is an infectious disease, and always comes from a germ somewhere. It may have been brought from a distant hennery on the clothing or shoes of the caretaker. It may have come on the person of a casual visitor. It may have been brought by birds. It may be in the houses and nowhere else. There is no more frequent cause of infection than this. Once chicken-pox has invaded a flock, it will occur again and again, succeeding years, unless the germs are eradicated by the vigorous use of boiling water and other germicides. Every inch of the walls of the houses, every nest box, every trough and fountain, must be thoroughly cleaned and disinfected if the ranch is to be hereafter free from this unpleasant visitor.

I have left the matter of treatment till the last because it is far less important than prevention. If you can not get rid of the cause of disease, doctoring is not worth much. Especially is this true of roup. "I gave up doctoring roup years ago," wrote an eminent poultryman, "because I found that as long as I doctored roup I continued to have more roup." What he meant was this, I think, that if the bird that has once had roup is cured and left in the flock it will breed roupy chicks as long as it lives, and they in turn will pass the tendency on to their descendants. If the roupy bird can be cured and marked so that it can never be used as a breeder, no great harm can result from keeping it, though it will not be a very valuable member of the flock, because its vigor is impaired. Chicken pox can be relieved and its duration shortened by the use of remedies. Indeed, Dr. Sanborn goes farther than this, and says that in many cases birds that have not already contracted the disease can be prevented from taking it by treatment.

For roup there are many remedies, but none better than the one so often mentioned in these columns, potassium permanganate, not in the form of "pink tea" administered internally, but used as an antiseptic wash. Into a lard pail or quart cup of warmish water drop permanganate crystals till the water is purple. A few crystals are sufficient. Into this dip the head of the affected bird and hold it there as long as you dare. I say this because the directions usually given say from 20 to 30 seconds and this is a long time to keep a chicken's or turkey's head under water. I prefer to let him come up to breathe between times. This treatment twice a day will cure most cases. For those it does not reach the ax is as good as anything.

For chicken-pox Dr. Sanborn used to recommend calcium sulphide in one-grain daily dose, but he now prefers flour of sulphur, mixed in the dry mash in the proportion of about 5 per cent of the whole mash, and kept before the whole flock till the epidemic has abated. Other experts advise the removal of the scabs on the afflicted birds and the treating of the raw sores with a 2 per cent solution of creolin, afterward dusting with iodoform. One such treatment may be followed by daily greasing with vaseline or lard.

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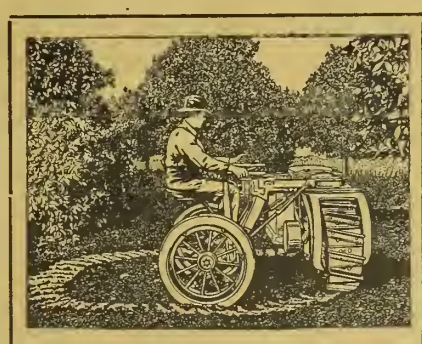

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The makers of the TrackPULL have been manufacturing orchard machinery for 34 years. They long ago saw the special need for special tractors to use in orchards and vineyards. They used their special knowledge and experience to design a tractor that would fit those needs exactly. No other machine can do what the TrackPULL does because no other is so designed. Don't make a mistake on tractors. Bean TrackPULL operates through single track which does both the pulling and steering. Pulls, "gees," "haws," and backs just like a team. Same power on turns as on straight-away. No over-loading one side, no pivoting, no uneven pulling when tools are hitched off center. Hitch them way off center—getting up close to trees and vines—pulls just as well. Twelve year-old boys can handle.

Valuable improvements in Motor, Track Rollers, Drive Sprocket, Bearings and Rear Wheels make the 1919 Model Bean the most efficient orchard and vineyard tractor manufactured. Costs nothing and doesn't obligate you, to investigate fully before you sign up for any other make. Write us now for the TrackPULL BOOK. We'll tell you name of nearest agent who can show the Bean. Let him save you money.

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131 N. Los Angeles St., Dept. D-10, Los Angeles, Cal.
Send me catalog and full information without obligation on my part.
Name .....
Street ..... State .....
City ..... County ..... No. of acres .....
Kind of crops grown .....

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Here's a big, new book on Good Furniture and practical Home-furnishings that we'll send you FREE POSTPAID if you'll send us your name and address. From its careful, concise descriptions and true-to-the-actual-article photographic illustrations you can easily make a mental picture of the home complete from cellar to attic. SEND IN YOUR NAME AND ADDRESS TODAY to Mail Order Division No. 25.

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Headquarters for **IRRIGATION** Supplies
Pumps, Engines, Sprayers, Hoists Etc
Catalog FREE on Request
Smith-Booth-Usher Co.
Los Angeles

When Writing Advertisers, Mention The Cultivator.

Household Department

A SNEAK OF A MAN

Somebody poisoned my dog today,
Though he never did anyone ill,
And so he is through with his canine play
And his waggy tail is still.
No more will I walk in the fields with him
Along at my side to jog,
And I don't care if my eyes are dim—
Somebody poisoned my dog!

He was homely. I know, as a dog could be,
And only a mongrel, too;
But I loved the old fellow and he loved me,
As people and dogs may do.
Nothing on earth could disturb his trust
Or his love and his faith befog,
And now he lies here at my feet, in the dust—
Somebody poisoned my dog!

He crawled to my side and licked my hand,
And then with a gasp he died;
And—though some people can't understand—
I patted his head—and cried!
For it isn't funny to lose a friend
From off of this earthly cog,
And he was loyal unto the end—
Somebody poisoned my dog!

I wonder how anyone could have done
This poor little fellow harm;
But here he lies—his race is run—
Though his body's still soft and warm,
My life is lived on a peaceful plan,
My pace is a quiet jog,
But—I wish I could find the snake of a man
That poisoned my little dog.
—Skaneateles Democrat.

THE SINKING OF THE OTRANTO

ONE of the most tragic happenings of the war was the recent sinking of the Otranto, an American troopship, in the North Channel between the Scotch and Irish coasts. No more thrilling tale of cool heroism has come over the cable. We quote from the press dispatch:

The Otranto, after the collision with the steamer Kashmir, was dashed to pieces on the rocks off the north Scottish coast with a probable loss of 372 American soldiers.

Three hundred and one men were taken to Belfast by the British destroyer Mounsey, the only vessel which made an attempt at rescue in the terrific gale when the Kashmir, another vessel in the convoy with the Otranto, rammed the Otranto amidships.

Seventeen men were picked up alive on the Scottish coast.

Of the 699 American soldiers on board the Otranto, 310 were landed. Seventeen were rescued alive at Islay, leaving 372 unaccounted for.

The Otranto and the other vessels of the convoy were battling with the heavy seas and high winds Sunday morning. The storm was so severe and the visibility so bad that the Kashmir, a former Peninsular and Oriental liner, crashed into the Otranto squarely amidships.

The Kashmir backed away badly damaged, but was able to make port.

As the bows of the Kashmir were pulled from the great hole in the side of the Otranto, the water rushed in, but for a time it did not serve to stop the engines. The Otranto tried to proceed, but made no headway against the gale in her crippled condition.

Within a short time the water put out her fires and the Otranto drifted helplessly toward the rocky coast of Islay Island, where most of the Tuscania victims met their deaths.

The Otranto struck the rocks Sunday night south of Saligo Bay, Islay Island, an uninhabited section, where the coast line in many places rises straight out of the water to the rocky peaks many feet above.

Thirty minutes after the crash the British destroyer Mounsey, herself damaged by the heavy seas, appeared out of the haze in answer to the distress calls of the Otranto. When the destroyer maneuvered to get alongside Captain Davidson of the Otranto warned Lieutenant Craven, commanding the destroyer, not to make the attempt.

When it was seen that Craven would make the attempt anyway, the men were ordered to remove their shoes and heavy clothing and try to save themselves as best they could.

The destroyer stood off about a hundred feet and then gradually came nearer, against the great odds of high waves and the wind, which threatened momentarily to carry her entirely away from the Otranto or dash her to pieces against the side of the wounded vessel.

As the destroyer steered toward the side of the steamer many of the men leaped too quickly and missed their reckoning and dropped between the boats. Some of these disappeared in the water, but others of them were caught and crushed to death between the boats and the lifeboats, which had been lowered to act as buffers. The destroyer was badly battered.

The captain of the destroyer, each time it was brushed away from the side of the Otranto, again would push near enough for many more men to jump to the deck of his vessel. He described as a veritable rain the number of men landing on the destroyer.

Many of those who reached the decks of the vessels suffered broken bones or otherwise were hurt. Those who missed the deck of the destroyer went to almost instant death.

Four times the battered destroyer came alongside and each time the previous scenes were repeated. At the end of the fourth trip she had 310 Americans, 236 of the crew, 30 sailors and one British officer on board. The bow was full, and, having done all possible, she started for port.

The survivors saw the Otranto drifting helplessly toward the rocks as they pulled away toward the Irish coast. The destroyer barely had time to send a brief message when her wireless was carried away. The little overloaded vessel had a rough trip to port.

One of the American soldiers on board the Otranto pictured the scene when the vessels collided. Soldiers lined the decks as though on parade and at the word of command stood at attention like statues. They never wavered, remaining there in military formation, exemplifying during the crisis the noblest traditions of the army for heroism and discipline. The same thing, said the soldier, applied to the seamen.

Number of bodies today were being washed up rapidly on the shore. It was reported that 175 had been counted at noon, and nearly all of them had been identified.

A seaman on the Otranto described the most tragic moment of the disaster as that when the order came for the men to jump and save themselves. The destroyer looked like a very small boat alongside the former Orient liner and many landsmen among the American troops thought themselves safer aboard the larger vessel. This was fatal to many of them.

The victims are to be collected at the most suitable place and buried there. A boat left Liverpool today with material for coffins, fifty laborers and carpenters and chaplains to conduct the funerals. The grave of every man will be marked and charted.

There were a few cases among the dead where identification was delayed. Every man had worn an identification tag on his wrist or neck, but in some instances these were torn off, and it was necessary to take finger prints of the men.

An instance of the many rescues by the Mounsey was that of T. L. Campbell, a Memphis lawyer and a secretary of the Y. M. C. A. He weighs 220 pounds. He was perched on the Otranto's rail awaiting a chance to

The Cultivator Patterns

9011—Girls' Dress. Cut in sizes 6, 8, 10, 12 and 14 years. The overblouse slips on over the head and the ends are extended under each arm to form a sash.

9014—Ladies' Surplice Waist. Cut in sizes 36, 38, 40, 42 and 44 inches hust measure. The back of the waist extends over the shoulders and the fronts are gathered.

9035—Children's Bishop Dress. Cut in sizes ½, 1, 2, 3 and 5 years. The high round neck with the turnover collar or the low round neck without the collar may he used.

9027—Misses' and Small Women's Dress. Cut in sizes 14, 16, 18 and 20 years. The neck is cut in V-shape and a sailor collar of contrasting material is the girlish finish.

9019—Ladies' One Piece Apron. Cut in sizes 36, 40 and 44 inches hust measure. The apron is cut in kimona style and widens out on the shoulders to form rippling sleeve caps.

9015—Child's One Piece Box Plaited Dress. Cut in sizes 2, 4, 6 and 8 years. The dress has a square yoke at front and back, and the fastening is to be found on the left shoulder.

9022—Ladies' Two Gored Gathered Skirt. Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. The skirt is gathered all around at the slightly raised waistline.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

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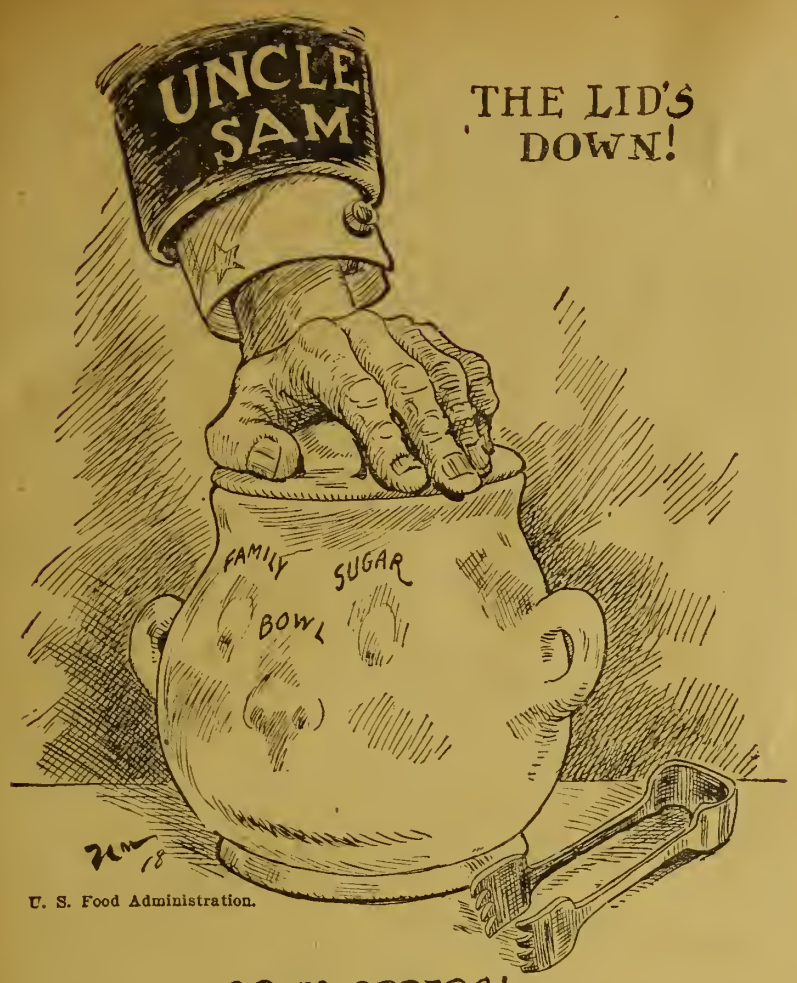

U. S. Food Administration.

spring upon the destroyer the third time the Mounsey came up. As he leaped the Mounsey lurched away, and instead of landing in the middle of the deck as he had hoped to do, one of his legs caught in the cable on the side of the destroyer. Campbell pulled himself aboard, uninjured.

"Just when the destroyer was pulling away the last time," said Campbell today, "the men lined the rails or stood on the afterdeck waving farewell. A huge wave struck a crowd of about eighteen privates on the afterdeck and a dozen of them were swept into the sea to sure death, as it was impossible to save persons from waves running 60 to 70 feet high."

The news of the collision reached London Monday, but nothing was known of the fate of the Otranto until this morning, when the first reports came from Islay. The storm continued to make further attempt at rescue impossible. No ships pass close enough to that coast in rough weather to see a stricken vessel ashore.

GOOD CAKE WITHOUT EGGS OR SHORTENING

Two-thirds cup sugar, two cups sour milk, one teaspoon soda, two teaspoons baking powder, two squares chocolate, two and one-half cups flour, flavoring and a few nuts if desired. This may be baked either in loaf or layers. Corn syrup of course may be used instead of sugar.

DARK LOAF CAKE

One-half cup sugar, one cup rice, three-fourths cup syrup, three-fourths cup sour milk, one teaspoon soda, dissolved in milk, two tablespoons chocolate dissolved in hot water, one cup raisins, one and one-half cups barley flour, one and one-half cups purified rice bran, one-half teaspoon each of cinnamon, nutmeg and cloves.

Bake in a loaf 45 minutes. Put in slow oven and increase heat after 20 minutes.

PEANUT HONEY CANDY

One cup butter, two cups honey, one cup boiling water, few grains bicarbonate of soda, one cup shelled peanuts.

Chop the peanuts fine and spread over bottom of greased pan. Mix the other ingredients and cook to "hard ball" stage and pour over the peanuts; let partially cool; cut in strips. Roll and cut crosswise.

BLEACHING AGENTS

If white clothes become yellow through long storage or poor laundering, they may often be bleached by placing them in direct sunlight, according to Marjorie Shutt, of the Colorado agricultural college. "It should be remembered," Miss Shutt says, "that sunlight is effective only while clothes are moist. Hang moist in the sun and as the material dries, again dampen and allow to remain in the sunshine out of doors. Repeat wetting process several times if necessary until cloth loses its yellow tinge. The frost often whitens stubborn yellow.

"If a chemical must be used, Javelle water is probably the best bleach. To make Javelle water place one pound washing soda and one quart of boiling water in an agate kettle and stir until soda dissolves. Then allow solution to cool. Dissolve one half pound of chloride of lime in two quarts of cold water. Let settle and pour clear liquid into cool soda solution. Strain, bottle, and place in dark place as exposure to light causes loss in strength of solution.

"Use this mixed with equal parts or more of water and do not allow garments to remain in the solution, for even at best the fiber is weakened by the action of Javelle water. Rinse well and to the rinse water add a little vinegar, which will remove any odor and offset the action of any of chloride of lime remaining in fabric."

USE SENSE IN CANNING

We know it to be the tendency of the human race to run to extremes.

When we find such vegetables as carrots, parsnips or pork and beans being canned, it is time someone laid a restraining hand and said, "Stop! You are wasting your time, energy and fuel, filling your cans with articles that may be preserved just as satisfactorily in some more simple way."

Do not allow your zeal and enthusiasm to can your common sense and good judgment.—Elizabeth Quaker.

Shipments of sugar from Cuba to the United States are scarcely five per cent below last year's shipments for the corresponding time in spite of the serious shortage of ships. About three-fourths of our sugar imports this year have been from Cuba.

Out of the last harvest the American people, by abstinence, saved 140,000,000 bushels of wheat to feed the hungry Allied nations; and these same people are going to stay right on the sugar job and see it through.

ITS PERFECTION GIVES
POSITIVE PROTECTION
AGAINST BAKE-DAY FAILURES
CALUMET
BAKING POWDER
1 lb
ABSOLUTELY PURE
NOT MADE BY THE TRUST
CALUMET
U. S. S. Michigan. First class battleship of the dreadnaught type. Steel vessel 16,000 tons. Length 450 feet. Breadth 80 feet. Horse power 16,517. Speed 19 knots.

Foods are as important as Fire Arms in war times. A soldier or sailor can't do his duty properly unless properly fed. His health and strength must be protected.

The Army and Navy use foods—*baking ingredients*—that have been selected with exacting care. Only the best have been allowed to "pass muster."

CALUMET BAKING POWDER

could only be accepted because of its excellence, and because of its purity and wholesomeness and the absolute protection it gives against bake-day failures.

Uncle Sam chooses from all. His selection should show *you* which brand of baking powder is best for your individual use.

"In for the night"
The room made cheery and comfortable by the glowing warmth of Perfection Oil Heater. Lights at the touch of a match. No troublesome fires to bother with. No dust, no dirt, no ashes.
Gives steady, comfortable warmth for many hours on one filling with Pearl Oil, the ever-obtainable fuel. No smoke or odor. Portable. Economical.
Buy Perfection Oil Heater today. Dealers everywhere.
STANDARD OIL CO.
(California)
HEAT WITH PEARL OIL
PERFECTION OIL HEATER

Man, Woman or Child Can Operate It

The Cleveland
"The Little Tank"

Equal to Three 3-Horse Teams and Three Men

The Tractor For Every Demand

You Cannot Afford to Wait

I have just been at the Cleveland Factory to increase my orders for tractors. We will get less. The Government has cut down the output. The big loss will come to the farmer for there will not be enough of all makes of tractors put together to go around and with the shortage of labor, thousands of acres of land will not be turned over this year. It is going to be a known loss to some farmers and the Government.

F. H. STOW

The Cleveland is small but powerful, it is simple but unusually economical. Comparatively light, yet heavy enough to do its work and keep on doing it.

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Protect Yourself—Order NOW

Full Line of Parts

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You can fatten a hog without cost

on what your hogs waste, for it's wasted grain that eats hog profits. With a Calco Automatic Grain Feeder the hogs eat as much and as often as they like. But they can't waste grain. It slides down into the circular trough only as fast as consumed. It can't be rooted out.

Calco Automatic Grain Feeder

will pay for itself in a few months through grain saved. It is a permanent investment. Made of "Armco" rust-resisting galvanized iron with a cast iron base. Extremely durable, sanitary; can't be upset. The high cost of grain feed demands feeding economy—Calco Automatic Feeder is the answer.

Try one out—write today for literature and price list.

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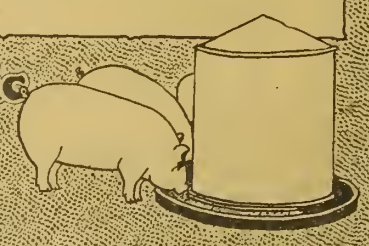

SECOND SALE OF

SHORT HORNS

Under the Auspices of

California Short Horn Breeders Association

Will Be Held at the Show Grounds of the

California International Livestock Show, San Francisco

on Thursday, November 7, 1918

at the hour of 9.30 o'clock, a.m.

30 Head Choice Bulls 20 High-class Females

Earl Gartin, of Greensburg, Indiana, Auctioneer

For Catalog Apply to

California Short Horn Breeders Association

320 Sharon Bldg. San Francisco, Calif.

Los Angeles Market

Los Angeles, October 23, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.

Cal. Extra Creamery 60

Oct.	16	17	18	19	21	22
'18 ...	60	60	60	60	60	60

Rcts. wk. ending Oct. 22, 193,800 lbs.

CHEESE

Brokers' prices:
California fresh, lb. 29

EGGS

Exchange quotations. Price to retailers 2 to 3 cents higher.

Fresh extras 76
Case Count 68
Pullets 63

Dairy Exchange prices past week on fresh extras.

Oct.	16	17	18	19	21	22
'18 ...	68	68	70	73	76	76

Rcts. wk. ending Oct., 22, 655 cases.

POULTRY

We quote to producers.

Broilers .....37@41
Fryers 33
Hens, small, 26, heavy .....26@29
Colored 30
Ducks, lb., 22; ducklings .....23@24
Roasters 30
Roosters, old 20
Turkeys .....31@34
Geese 20
Belgian Hares 18
Squabs .....30@35

LIVESTOCK

We quote cwt. f. o. b. L. A.
Corrected Wednesday morning, October 23, by the Cudahy Company.

Cattle—
Beef steers, av. 1000-1100 lbs.....12.00
Heifers, good 9.00
Cows, good 8.50
Veal Calves 10.00
Canners .....5.00@6.00

Hogs—
Av. 150 lbs. 16.00
Av. 175-225 lbs. 17.00
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers 11.50
Ewes 10.50
Lambs 15.50
Yearlings .....11.50@12.00

POTATOES

Wholesale selling prides:

Burbanks .....2.00@2.40
Sweet, lug .....75@80
Idaho Russet .....2.25@2.30

ONIONS

Wholesale selling price, cwt.

Australian Brown, lug .....1.50@1.65
Silverskin, lug .....1.60@1.75
White Globe, lug .....2.10@2.25

VEGETABLES

Wholesale prices:

Beans—String .....5@6
Limas, lb. .....4@5
Cabbage, cr. .....1.50@2.00
Carrots, doz. 40
Cauliflower, cabbage cr. .....2.25@2.50
Celery, cr. .....2.50@3.00
Corn, lug 75
Cucumbers, lug 75
Egg Plant, lb. 3
Horseradish, lb. 15
Lettuce, cr. .....50@60
Peppers, Chili, lug 45; Bell, lug 45
Squash—Hubbard, lb 1½
Tomatoes, lug .....65@85
Turnips, doz. 40

FRUITS

Wholesale prices:

Apples—King David .....2.25@2.50
Bellefleurs, bx. .....1.40@1.60
Newton Pippins 2.25
Jonathans .....2.25@2.50
Cranberries, lb. 12
Figs, lb. .....3@5
Grapes — Homegrown, best per pound, Muscat, 4@5; Tokays, 5@6; Cornichons, 5@5½; Malagas, 6.
Melons—Casabas, lb., 2; Watermelons, lb., Casabas, 3.00@3.25; Watermelons, lb., ½@1.
Peaches—Salways, lug, 1.75@2.00; Orange Cling, 1.75.
Pears—Bartletts, bx. 2.75
Quinces, lug .....80@90

CITRUS

Lemons, packed, 4.00; loose 2.50
Oranges—Valencias .....10.00@12.00
Grapefruit .....4.50@6.00

HONEY

Jobbers' prices:

White extracted .....20@22
Light amber extracted .....18@20
Amber extracted 16
Fancy white comb, per case.....6.50
Comb Lt., amber, per case .....5.00@6.00
Beeswax, lb. .....32@34

BEANS

Price to retailers (F. E. Harris Co.), cwt.:

Lady Washington 11.00
Navy 11.00
Pinks 8.25
Tepary 7.00
Red Mex. 8.75
Lima 12.50
Blackeyes 7.00
Garbanzos 10.75
Soy 7.75
Lentils 22.00
Kidney 11.75
Henderson Bush Lima 10.50

HAY

Quotations by Nichols - Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

No. 1 Tame Oat .....26.00@28.00
No. 2 Tame Oat .....23.00@25.00
No. 1 Barley .....22.00@24.00
No. 2 Barley .....19.00@21.00
No. 1 Alfalfa .....20.000@22.00
No. 2 Alfalfa .....17.00@19.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS

See San Francisco market.

San Francisco Markets

San Francisco, October 22, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapped, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:

Extras 61

Oct.	15	16	17	18	19	21
'18 ...	62½	62½	62½	62½	62½	61
'17 ...	46	46½	46½	46½	46½	..

Rcts. wk. ending October 21, 277,700 lbs.

CHEESE

Dairy Exchange quotations:

Cal. Flats .....29@30½
Cheddar 30½
Jack Cheese, full cream 28

EGGS

Dairy Exchange quotations:

Extras 81
Selected Pullets 69

Oct.	15	16	17	18	19	21
'18 ...	72½	74½	74	76½	80	81½
'17 ...	54½	54	54	53½	53½	..

Rcts. wk. ending Oct. 21, 5673 cases.

POULTRY

We quote to producers, lb.:

Per lb.: Large hens, 32@35; Leghorn hens, 31@33; broilers and fryers, ¾ to 1½ lbs., 45; 1½ to 2 lbs., 34@35; 2 lbs. and over, 33@35; old roosters, 22@23.
Belgian hares, live, 17@18.
Jack Rabbits, doz., 2.50@3.00.
Squabs, doz., 4.00@5.00.
Turkeys, dr., 34@35; live, 36@38.

LIVESTOCK

Prices gross weight:

Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.

Steers, lb., 10@12; thin, 8@9; cows and heifers, 6½@8; thin, 4@5; calves, 6@11.

Sheep—Lb. gross weight: Wethers, 11½@12; ewes, 9@9½; lambs, yearlings, 12@12½; milk, 14@14½

Hogs—Hard grain fed, weighing 100 to 140 lbs., 17¼; 140 to 300 lbs., 17¾; 300 to 400 lbs., 17¼.

POTATOES

Wholesale selling prices at wharf, cwt.:

Gems 2.25
River, new cwt. .....1.45@1.90
Sweets, lb. .....3@3½

ONIONS

Wholesale selling price on wharf, cwt.:

Australian, Brown and Yellow....90@1.00
Garlic, new, lb. .....12½@15

VEGETABLES

Wholesale selling price:

Artichokes, doz. .....40@75
Beans, String, lb. .....2½@4
Limas, lb. .....6@8
Celery, doz. .....25@50
Cucumbers, lug .....1.00@1.25
Pickling, lb. .....2½@5
Onions, green, bx. .....65@75
Egg Plant, lug .....50@1.00
Peas, lb. .....12@15
Peppers, Bell, lug .....75@1.25
Squash—Summer, lug 50
Marrowfat, sk. 1.00
Cream, 75@85; Hubbard, sk...1.00@1.25
Tomatoes, lug .....50@1.00
Pumpkins, sk. 1.00

FRESH FRUITS

Apples—Jonathan .....1.50@2.50
Bellefleur .....1.50@2.00
Newton Pippins .....1.25@1.60
Spitzenberg .....1.75@2.50
Bananas, lb. .....7½@8
Berries—Ch.: Strawberries, 10.00@15.00; raspberries, 10.00@11.00; blackberries, 10.00; huckleberries, lb., 10@15.
Figs, double layer, Bl. .....1.00@1.25
White 75
Grapes — Lug, 1.50@2.25; Fy. Muscat

CALAVADA

Sheep MANURES Steer

From highest nitrogenous feed. Decomposed and concentrated by age in their own liquids, containing the highest percentages of Nitrogen, Phosphoric Acid, Soluble Potash, and readily available Humus.
Shipped commercial dry. Cars average 22 to 24 tons. Saves four-fifths labor in application. Thousands of tons now being shipped to citrus and deciduous growers in California.
Write for samples, prices and particulars today to insure prompt deliveries.

Calavada Fertilizer Company

423 Citizens National Bank Bldg. Phone 65643
Los Angeles, California

FOR SALE

Cleveland Tractor

Used 30 days

Address

Cleveland Tractor

Lindsay, Cal.

and Cornichons, 2.00@2.50.
Melons — Persian, 1.25@1.75; casabas, 1.00@1.25.
Nectarines, cr. .....50@1.00
Olives, lb. .....10@12½
Peaches, bx. .....1.00@1.50
Pears, Bartlett, wrapped bx.....2.50@4.50
Beurre Hardy, lug .....1.40@1.50
Persimmons, bx. .....1.00@1.25
Pomegranates, ½ orange bx.....1.25@1.50
Pineapples, doz. .....4.50@5.00
Quinces, lug .....1.00@1.25

CITRUS

Lemons, bx., fy., 8.50@9.00; oranges, 11.00; grapefruit, 6.50@7.00.

DRIED FRUITS

Raisins: Associated prices 1918 are:
Muscats: Packages seeded, fancy, 36-16s, 9.625; fancy, 48-12s, 7.75; choice, 36-16s, 9.125; choice, 48-12s, 7.375. Bulk seeded: 25-lb. Bakers, 8.00; 25-lb. fancy, 8.85.
Thompson Seedless; packages recleaned, 48-16s to case, 9.90; bulk, recleaned, 36-12s to case, 8.00; package, recleaned, 25-lb. boxes, 9.25. Sulphur bleached — northern stock: Bulk, 25-lb. boxes, choice, 10¼; bulk, 25-lb. boxes, fancy, 10¾; bulk, 25-lb. boxes, extra fancy, 11¼. Soda dipped — northern stock — Bulk, 25-lb. boxes, 10.
Loose: 1-crown, 25 lb. boxes, 8½; 2-crown, 25 lb. boxes, 7½; 3-crown, 25 lb. boxes, 8; 4-crown, 25 lb. boxes, 8¾.
Layers: 3-crown, 20 lb. boxes, 1.85; 3-crown, 20 1-lb. trays to box, 2.00; 4-crown, 20 lb. boxes, 2.10; 6-crown, 20 lb. boxes, 2.95; 3-crown, 10 lb. boxes, 1.05; 4-crown, 10 lb. boxes, 1.20; 6-crown, 10 lb. boxes, 1.65; 3-crown, 5 lb. boxes, .65; 4-crown, 5 lb. boxes, .70; 6-crown, 5 lb. boxes, .90.
Sun-Maid clusters, 20 1-lb. cartons to box, 2.35.
Imperials, 4 5-lb. cartons to box, 3.40.
Vineyard run, 50 lb. boxes, 3.90; 100 lb. boxes, 7.50.
Sultanas. Packages, recleaned, 48-16s to case, 9.65; bulk, recleaned, 25-lb. boxes, 9.00.
Peaches — California Peach Growers quotes opening prices for 1918 crop f. o. b. factories California. Prices guaranteed to December 31.
Bulk basis and boxes unfaced 1 and 2 cents more.

	Practically Peeled	Yellows (Old style)	Muirs (Old style)
Standard	12⅞c	11¼c	11⅜c
Choice	13⅜c	11¾c	11⅞c
Fancy	14⅜c	12½c	12⅞c
Ex. Fancy	15½c	13¼c	14c
Slabs		10¼c	

Prunes and Apricots. The Prune and Apricot Growers' Association have named following prices on apricots:
Standards 9½
Choice 18
Extra Choice 14½
Fancy 16
Extra Fancy 17½
Extra Moorparks 19
Slabs 11
Cash on delivery price on all grades will be 8 cents with the exception of standards and slabs on which it will be 6 cents.
Prunes: The government will take all the 50-60; 60-70; 70-80 sizes. The quotations sent to the trade last night are as follows:
The bulk prices will be:

Sizes:	Price per lb.
20-30	17
30-40	10¾
40-50	10
50-60	9
60-70	9
70-80	8¾
80-90	8¼
90-100	7¾
100-120	4¾
Above 120	4¼

One cent per pound, and one and one-fourth cents per pound will be added for 50 and 25-lb. boxes.

NUTS

The Almond Growers' Association has established opening prices as follows per pound:
Nonp. 27½
I.X.L. 25½
Ne Plus 24½
Drake 20
Outside dealers have named prices above these quotations and it is understood association stock is practically closed out and prices withdrawn.
Walnuts: Net prices have been named by the California Walnut Growers Association:
No. 1 Softshell 28
No. 2 Softshell 25
Jumbo 30
Fancy Budded 31½
Golden Gate Budded 29
Franquettes, Eurekas and other fancy varieties sold on sample. No. 1 Softshell guaranteed 88 per cent good; Fancy Budded, 90 per cent. In case of worms or damage by ants not more than five per cent.

RICE

California Rice—1917 crop, nominal; 1918 crop, when harvested per 100 lbs.: Paddy rice, 4.32; clean fy. Japan, 7½ lb.; ch. Japan, 7 3-8 lb.; fy. second head, 6 7-8 lb.; screenings, 5 5-8; lb.; brewers, 5¼ lb.; rice polish, $50 ton, car lots; rice bran, $36 ton, car lots.

BEANS

Jobbers' prices, cwt., recleaned:
Limas 12.40
Bayous .....7.50@7.75
Small Whites 11.00
Large Whites 9.40
Mexican Reds .....7.50@7.90
Blackeyes 6.90
Pinks .....7.40@7.50
Red Kidney .....Nominal
Cranberry .....Nominal
Teparies .....7.00@7.50

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....17@20
Amber extracted 16
White comb, cs. .....4.50@6.00
Light amber comb, cs. .....3.50@4.00
Beeswax .....32@34

HAY

Under date of October 19, Scott, Magner & Miller says:
Receipts past week 698 tons—last week, 553 tons.
As has been the case of the past two weeks, most of these arrivals have been alfalfa and grain hay that received the September rains and is more or less damaged. Some alfalfa that was in the stack during the rain and is now being baled shows up in fairly good condition although evidence of the rain can be seen through streaks of discolored hay, as well as a bleached color to the balance. Fancy wheat hay, as well as Red Oat hay, has sold during the week at our top quotations. The feature of the market this week is the placing of orders by the government for about 8000 tons of grain hay, most of which was placed with dealers in this city. This, no doubt, will have somewhat of a bearing on prices in country districts where trade has been quite dull of late. The present north winds, if followed by frost which is usually the case at this time of the year, may injure the green feed considerably although at the present time in most places the feed never was better.
We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.
Fancy Wheat Hay (light 5 wire bale) .....28.00@30.00
No. 1 Wheat or Wheat and Oat hay .....26.00@28.00
No. 2 Wheat or Wheat and Oat hay .....22.00@24.00
Choice Tame Oat hay .....25.00@27.50
Other Tame Oat hay .....22.00@24.00
Wild Oat hay .....22.00@24.00
Barley hay .....22.00@24.00
Alfalfa .....18.50@22.00
Stock hay (in order) .....18.00@21.00
No. 1 Barley straw, bale.....50@80
Damaged hay (all kinds), according to condition.
Other Tame Oat Hay .....22.00@24.00
Wild Oat Hay .....22.00@24.00
Barley Hay .....22.00@24.00
Alfalfa .....22.00@25.00
Stock Hay .....18.00@21.00
No. 1 Barley Straw, bale.....50@80
Damaged Hay (all kinds).....Nominal

SEEDS

Flax, lb. .....8@8½
Hemp .....Nominal
Millet .....5@5½
Rape .....2½@5

Citrus Fruit Market

Los Angeles, Oct. 23, 1918.

Two dollars per box was clipped off the price of oranges in one day in the New York market. A half of this however, was back the next day. The market conditions remain firm in all sections and small amount of fruit yet to go forward will sell at long prices. Many sales have been made above the $18.00 mark.
Lemons on the other hand are plentiful and being harvested in large quantity in all California orchards. In spite of heavy shipment prices are holding up, ranging around $7.00.

Shipments

Shipments of citrus fruits to date since November 1, 1917: Southern California; oranges 14,275 cars, lemons 5914, total 20,189. To same date last season, oranges 39,968, lemons 7664, total 47,632. Central California this season; oranges 2536, lemons 115, total 2651. Last season to same date; oranges 4665, lemons 164, total 4829. Northern California; oranges 203, last year same date 845.

AT THE AUCTIONS

October 16
New York: 10 Val., 4 lem. Val. 9.15-18.05, lem. 6.10-8.80.
Boston: 2 oranges, 1 lem. Val. 7.80-12.05, lem. 7.55-7.95.
St. Louis: 1 orange, 1 lem. Val. 8.80, lem. 6.45-6.95.
October 17
New York: 7 oranges, 6 lem. Val. 6.85-17.05, lem. 5.25-8.95.
Philadelphia: 4 oranges, 3 lem. Val. 11.05-13.35, lem. 7.20-9.00.
Boston: 2 oranges, 1 lem. Val. 11.30-12.80, lem. 8.10-8.20.
October 18
New York: 7 oranges, 2 lem. Val. 9.90-18.05, lem. 7.10-8.70.
Boston: 3 oranges, 1 lem. Val. 7.70-12.85, lem. 6.50-8.20.
Cleveland: 1 car lemons. Lem. 7.35-7.70.
October 21
New York: 21 oranges, 4 lem. Val. 9.10-18.05, lem. 9.40-10.00.
Boston: 4 oranges, 2 lem. Val. 6.20-11.70, lem. 6.40-8.05.
Philadelphia: 3 oranges, 2 lem. Val. 7.10-14.85, lem. 7.10-8.75.
Pittsburg: 1 oranges, 2 lem. Val. 11.95-15.95, lem. 6.00-8.30.
October 22
New York: 14 oranges. Val. 7.80-17.70.
Philadelphia: 3 oranges, 1 lem. Val. 8.95-13.80.
Boston: 3 oranges, 1 lem. Val. 9.55-11.10, lem. 7.65-8.00.
St. Louis: 1 car lemons averaging 9.25.

PARTIAL LIST CALIFORNIA FRUIT AND VEGETABLE SHIPMENT

From post card reports to the Los Angeles branch of the bureau of markets, report is made of the following shipment of cars of products from California for the week ending October 7: Apples, 189; cabbage, 6; cantaloupes, 4; casabas, 3; carrots, 8; corn, 1; dried apricots, 11; dried beans, 120; dried carrots, 1; dried figs, 21; dried peaches, 26; dried pears, 3; dried prunes, 16; grapes, 1114; lettuce, 12; mixed fruit, 5; mixed vegetables, 14; mixed fruit and vegetables, 28; mixed dried fruit, 7; onions, 193; peaches. 22; pears, 55; peppers, 19; pomegranates, 1; potatoes, 458; quinces, 2; raisins, 110; sweet potatoes, 26; tomatoes, 121; watermelons, 11.

FRUIT AND VEGETABLE SHIPMENTS

From post card reports to the Los Angeles branch of the bureau of markets, report is made of the following shipment of cars of produce from California for the week ending October 21: Apples, 213; cabbage, 2; casabas, 7; cauliflower, 2; dried apples, 3; dried apricots, 12; dried beans, 136; dried figs, 12; dried peaches, 16; dried pears, 6; dried prunes, 16; grapes, 1572; lettuce, 1; garlic, 1; mixed fruit, 6; mixed vegetables, 16; mixed fruit and vegetables, 31; mixed dried fruit, 19; onions, 118; peaches, 19; pears, 47; peppers, 13; persimmons, 1; pomegranates, 5; potatoes, 229; pumpkins, 1; quinces, 1; raisins, 155; sweet potatoes, 35; tomatoes, 173; watermelons, 5.

ORGANIC MATTER IN SOIL

Continued from Page 415

the organic materials and silt that have been deposited there. All such material is hauled out and spread on the land.
It is evident, not alone from Director Stockdale's statement, but also from a very casual observation of the customs of the people hereabouts that the organic material problem is as real here as it is in California, despite the rank jungle growth that one sees at times. Where attention has not been paid to the problem by the farmers, crops are lacking—and there are some large tracts in southern India where that is the case. Rotation of crops for harvesting, which include certain of the legumes, are quite common, but to me the striking thing is the very general use of green manures —which is fully as common a practice here as it is with the citrus growers of California.

WEATHER CONDITIONS

San Francisco, Cal., October 19, 1918.

Stations	Rainfall Wk.	Rainfall Season.	Rainfall Norm.	Temp. Max.	Temp. Min.
Eureka	.28	2.47	2.85	68	46
Red Bluff	.02	7.87	1.67	86	50
Sacramento	.08	3.96	.98	88	48
San Francisco	.04	2.70	.96	84	56
San Jose	.02	6.46	.87	88	42
Fresno	.00	.59	.66	94	48
San Luis Obispo	.76	1.50	1.08	94	50
Los Angeles	.00	.67	.41	86	58
San Diego	.01	.59	.35	82	58

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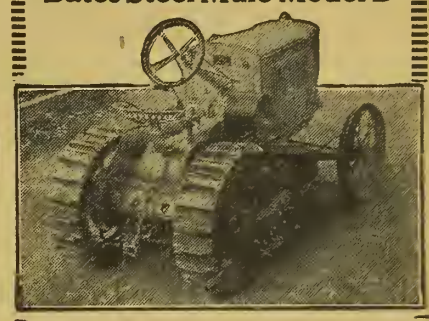
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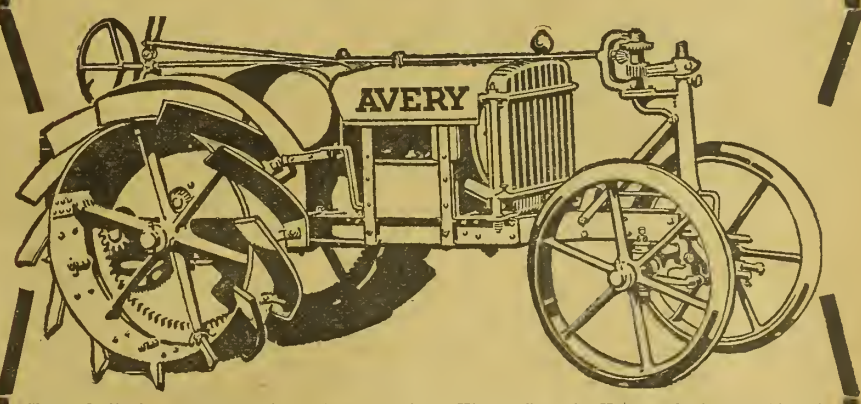

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is a promise of real tractor service. If either your present tractor or the new one you decide upon has some other ignition system, have Bosch installed instead. Its rip-roaring sparks, its rugged sturdiness and its never-failing dependability will make a world of difference.

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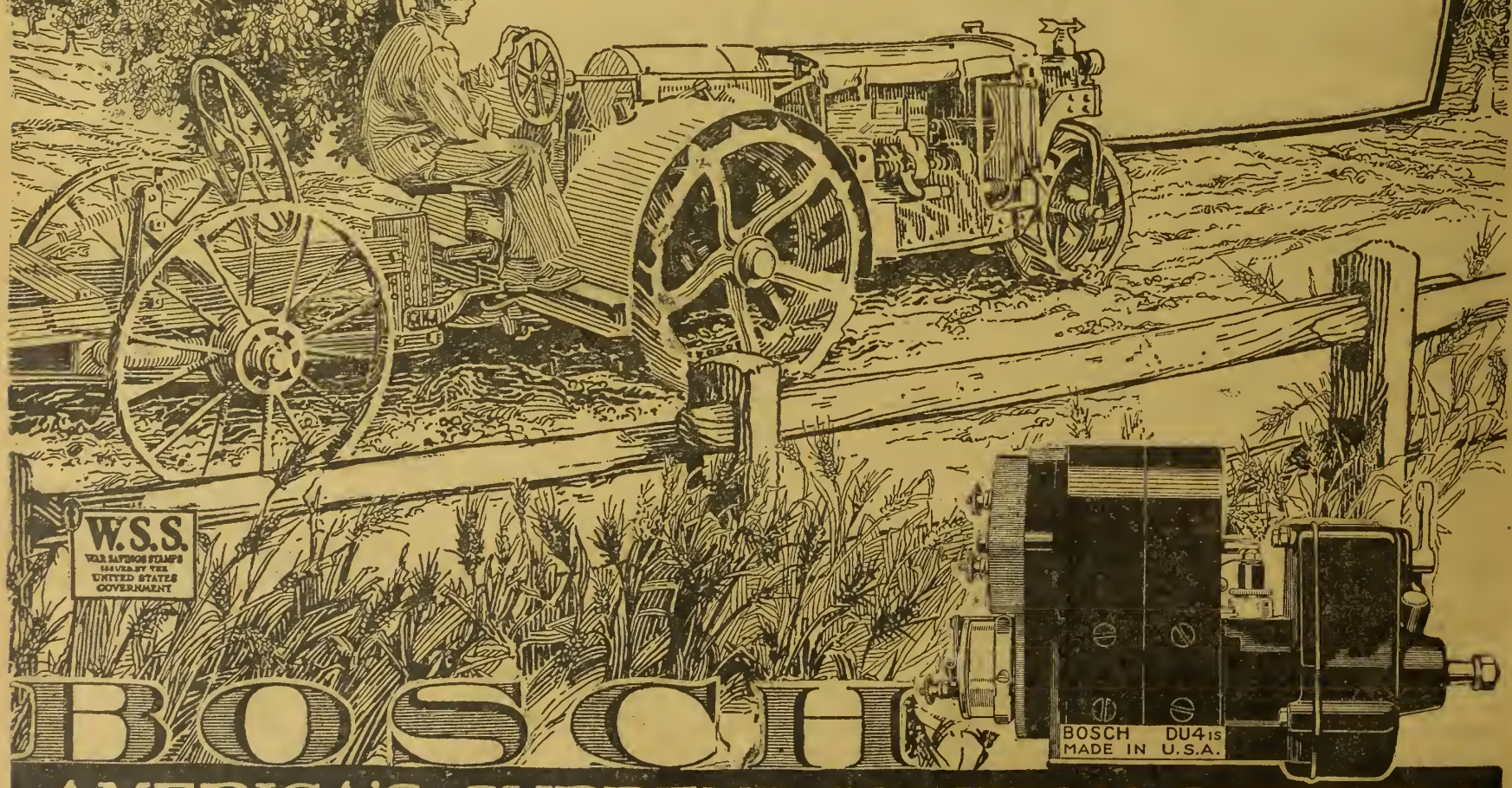

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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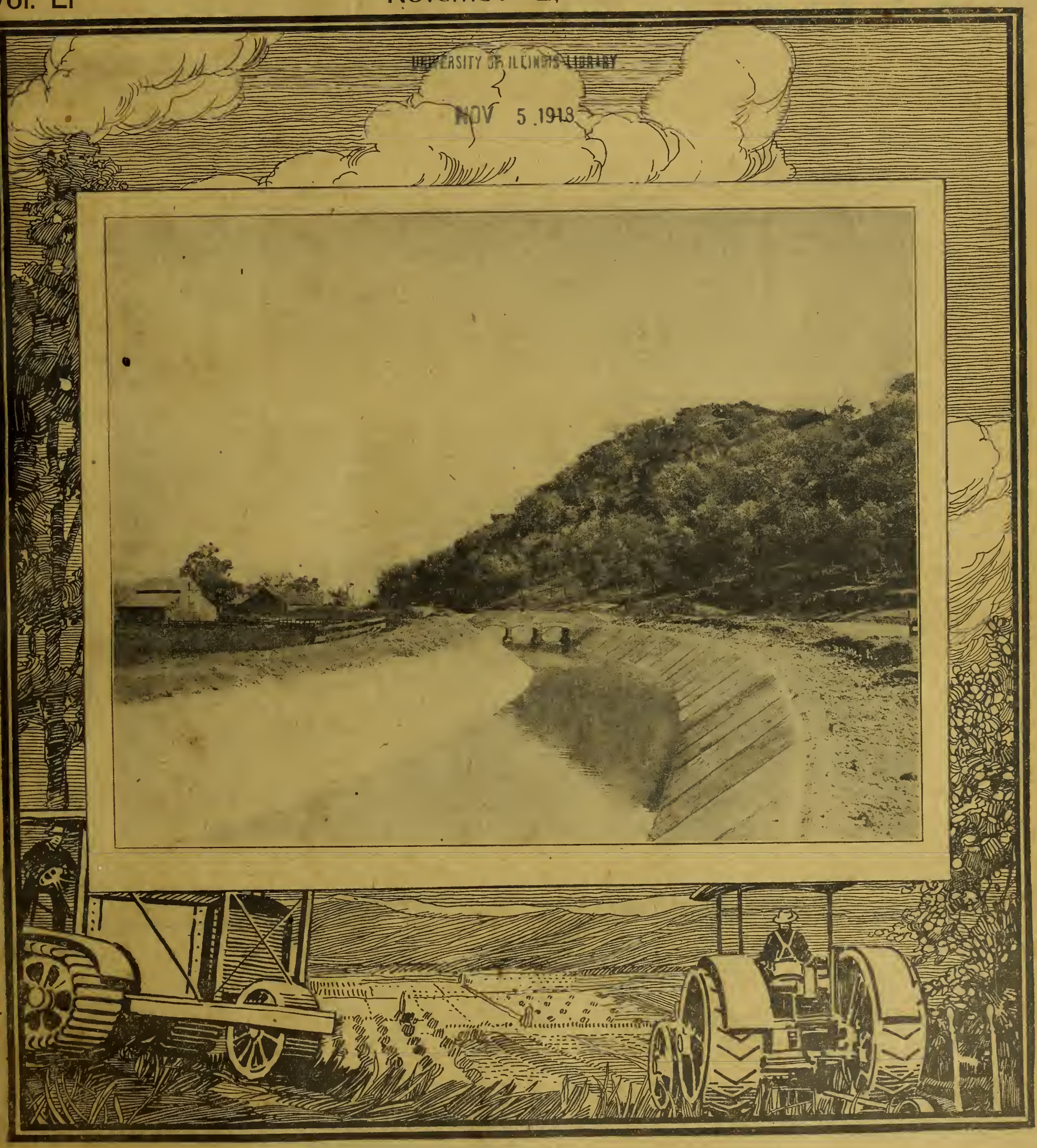

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

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Saturday, Nov. 2, 1918

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

A view of a canal taking waters to the rice fields of Yolo County is on the cover of this issue. This is one of the many thousands of such scenes which might be shown of California irrigation systems. This view was taken where the canal leaves the Capay Valley for the rice fields. Yolo County has taken much pride in her war productions, and some months ago when it appeared she had gone her limit in preparation for grain production additional arrangements provided for the bringing of more water, and 10,000 more acres were planted.

California's producers have been important factors in the speeding up of food production.

CONVENTION WEEK

State Commissioner Hecke writes: "State Fruit Growers' and the four other conventions at Riverside postponed — it is hoped for only a short time."

WALNUT WORM

Last week we referred to the walnut worm and to the fact that Prof. Ralph E. Smith was working under direction of the Walnut Association to devise means of fighting this pest. We are glad to give in this week's paper more information, with engravings showing some results of the pest's work. We are indebted to the California Walnut Growers Association for use of these engravings.

NINETEEN DOLLARS A BOX

Some years from now when Valencia orange growers are taking prices somewhat less than they are today they will probably refer back to the old-time war days when California Valencias sold in New York for $19.00 per box. This is something better than a bit apiece, and this, bear in mind, is jobber's price direct from the car. Last year's top-notch was $12.50, which was close up to the record. Such prices are probably not any great help to the industry; however, they may help to attract attention to the worth of California fruit which is in such high favor.

WILLIAM WOOD

Uncle Billy Wood, for years horticultural commissioner of Los Angeles County, has passed. Mr. Wood was for many years a nurseryman and for years connected with the Los Angeles County horticultural commission as inspector. Six years ago he became commissioner, and the county never had a better. His every effort has been toward effecting competent horticultural service and extending California's wealth through her orchards and vineyards. The funeral was held last Monday in one of the parks of his home city, Whittier, which turned out to honor one of her most faithful servants.

A PURE-FEED LAW

The California Swine Breeders' Association announces that as an organization they propose to have introduced before the next legislature a pure feed bill embodying all the desirable features of feed control laws in operation in other states. Here is a splendid opportunity for every live stock organization in California to line up behind a bill that will mean thousands of dollars annually to the users of feed. At the present time, when greater quantities of mixed feeds are on the market than ever before, the feeders of this state are without real protection. Certainly with present prices of feeds the buyer is entitled to know what he is getting for his money.

The operation of a pure feed law will in no way react to the disadvantage of any person save the dishonest and unscrupulous manufacturer or dealer.

All that such a law requires is that the sack be labeled as to its contents and that the contents be just what the label calls for.

This bill when introduced in the legislature should have the combined and active support of all live stock organizations. Each individual user of feed should make it his particular duty to see that his representative and senator has impressed upon him the need and importance of this bill.

SAVED COAL

The fuel administration estimates that approximately a million and a quarter tons of coal have been saved in the United States during the past seven months as a direct result of daylight saving. The daylight saving scheme ended at two o'clock last Sunday morning, when all trains and clocks were stopped for one hour. Solar time will prevail until the last Sunday of March, when, unless the present law is changed, clocks will again be pushed ahead.

THE "FLU"

The "flu" has raised Cain with things in general and with conventions and fairs in particular. The Liberty Fair in Los Angeles is now three weeks overdue; the California International, due to open today in San Francisco, now announces November 16 as opening day. But the Liberty Fair, which had planned for its deferred opening today, November 2, is still indefinitely continued until authorities can agree that danger from influenza has passed. Practically all activities, even to the movies, have been discontinued. Health boards have done their best; scores of physicians and nurses have given their lives in their fight against the disease. California business interests feel that they have been hard hit, but the situation is no worse than in other sections of the country.

CALIFORNIA'S LABOR PROBLEMS

There will be a conference of those interested in California's labor problems at the quarters of the council of defense, Ferry Building, San Francisco, beginning Friday morning, November 8. The conference is under the direction of the state council of defense and the United States department of agriculture. The conference will open with five minute reports from delegates representing the farm side of the labor problem. There will be other addresses outlining the scope of other organizations having help to offer, then discussions of farm losses because of labor shortage in '18, as to aid which may be given by state and federal employment service, the greater use of women in agricultural work, the United States working reserve, feasibility of anti-vagrancy legislation, standardization of farm wages, and better utilization of Mexican labor.

It is possible the conference may result in the organization of a farm labor council which shall endeavor to bring together all other labor activities to the end that better labor conditions may prevail in 1919.

THE GREAT ADVENTURE

The Cultivator has taken no hand whatever in the discussion of the merits of the vast number of initiative and other measures to be voted upon at the election next Tuesday, November 5. But there is one measure which calls for serious consideration on the part of every farmer, so we take the liberty of calling attention to Number 19, "Land Values Taxation." This is the single tax measure which for years has been before California voters. Provisions of this measure are so familiar we will not enlarge upon them other than to call attention of every land owner in California to the fact that the values of his land and all realty holdings in the state are endangered by this measure. We grant that there is great injustice in the matter of valuations of land under our present assessment system, and this must be corrected, but to wipe out all values that a few large land holders may be punished is simply cutting off your nose to spite your face.

The organ of the single taxers is "The Great Adventure," which is certainly a well chosen name, for it will prove a "great adventure" to many a farmer's hopes if single tax prevails.

Vote No on Number 19.

GONE TO WASHINGTON

George E. Farrand, one of California's ablest attorneys, and who has guided many of our cooperative organizations through legal tangles to a solid and substantial position amongst commercial organizations, has been drawn to aid the food administration in its war work at Washington. The legal work of the walnut and other associations will be handled by Mr. Farrand's office during his absence, which will probably be until the end of the war.

This Week's War Notes

The advance of the Allied troops through Bulgaria and Servia is almost unopposed. The Allies are not far from Belgrade.

Austria-Hungary replies to the president, practically accepting all of the conditions made in his last note, and asks President Wilson to take up with the Allies negotiations for an armistice and peace.

During the past week this government has loaned Belgium $9,000,000, making a total loaned to that country of $180,020,000. This country's total loans to Allied governments now aggregate $7,529,476,666.

Both Austria and Turkey appear to be at the breaking point and are asking the Allies for peace at any price. Vienna's plea for an armistice is interpreted in military circles as capitulation as complete as that of Bulgaria.

The Allied drive continues, though the northern end of the line near Holland has been more quiet than the preceding week. American guns are now thundering at Metz and French and British troops are still active northwest of Verdun.

The drive of the Allies on the Italian front netted 15,000 prisoners on Monday. The Italians have crossed the Piave and have driven wedges in the Austrian line at many points. Up to Monday night the casualties of the Austrians were estimated at 72,000. Austrian troops who have been captured know nothing of the peace drives.

The Versailles conference has outlined its terms, including withdrawal of all Teutonic troops from invaded territory, surrender of all ordnance and ammunition, demobilization, surrender of frontier fortresses, release of Allied prisoners, retention of German prisoners until restoration, surrender of all submarines, Helgoland and Kiel.

The international center has shifted from Washington to Versailles, where representatives of the Allied governments are discussing terms of an armistice which may be granted to the Central Powers. The general impression is that these terms will be practically unconditional surrender. E. M. House is President Wilson's representative at the conference.

Ludendorf has resigned. The belief held by some is that his resignation is due to change in internal government by which civil authorities may have "undue" power over the military arm of the government; others think he took this action because of coming defeat or internal dissension. German newspapers have also reported rumors of Marshal von Hindenburg's resignation.

Only rumors are available as to internal conditions in Austria-Hungary, but these are unanimous that near-anarchy prevails, especially in Croatia, where riots have caused the death of hundreds. The German kaiser says: "I will not abandon my sorely-tried people, but if necessary I am ready to become something like hereditary president of a German republic, like the kings of England and Belgium."

President Wilson's reply to Germany, dated October 23, was printed in both English and German in some of the Berlin papers. The president suggested "Nothing can be gained by leaving this essential thing unsaid." "This essential thing" was in effect that the Allies would in no way deal with those who have been the military masters of the German people. This because they did not follow the rules of civilized warfare and were lacking in common honor and integrity.

Purebred Stock---Thoroughbred Men

"WE CAN make better men by using $500 cows than by using $50 cows." This is not the motto, nor even the slogan, of an educational institution, but an off-hand expression of the director of the greatest feature in a movement which has for its aim the making of better citizens. In fact, its motto is: "Nothing without labor." And the labor chosen as the most educational in the making of better citizens is agricultural labor.

Practical and Attractive Milk House

It is easy to produce good milk in this milk house because it is efficiently designed and the boys take pride in keeping it clean.

The director is R. A. Condee, director of agriculture of the California George Junior Republic. This Republic, by the way, is, we believe, the smallest in the world. In saying this, we make due apologies to San Marino, the tiny republic within the kingdom of Italy, whose total population is little over 9000, and whose area is only 32 square miles, and whose regular army consists of one regiment and one cannon which may not be fired for fear the shot will land outside the republic.

This George Junior Republic is located at Chino, San Bernardino County. The lands included within its boundaries aggregate 270 acres and they are used to give 60 young men above the age of 14 years opportunity to learn the truth of the Republic's motto, "Nothing without labor". But as Director Condee intimated regarding the influence of pure bred stock, the Republic also believes it can make better citizens with attractive surroundings. So the well built "state" buildings, the office, dining hall, library, even the jail, are given a most beautiful setting on the hills overlooking the rich Pomona Valley.

There are perhaps a score of buildings located on these sightly hills, the most prominent of which is Casa Colina, the home of Mrs. Margaret B. Fowler and built on the property of the Republic to be used as a settlement house and temporary home for herself or others interested in the work of the Republic.

The 60 boys are not housed in a large dormitory, but in cottage homes, each with its matron, but all dine together as one large family, a matron to each table. Except for three or four hours of schooling each day the boys put in their time at farm work. Each one is allowed his own plot of garden or small portion of the field, and some, who show particular adaptability to live stock raising, are permitted to care for and own stock of their own. One of the boys is just completing payment on a liberty bond which was secured through sales of pure bred stock which he had cared for. Others are taught the handling of tractors, plows, and disks, and the cutting of silage and other power farming operations.

As Mr. Condee indicated regarding the influence of high quality live stock in the making of men, the same influence obtains in general farming operations. The son of the farmer whose repair shop appliances are principally baling wire and old tin cans is reasonably sure to continue the father's makeshift methods.

Of the live stock and the farming methods Mr. Royce will speak later. But as to the making of men from boys whose opportunities are not of the best the institution is unique.

Part of the Dairy Plant

The milking barn and silo have just been completed. The new feeding barn is in course of construction.

The citizens consist of two classes of boys; those who have been called before the juvenile court, and whom the judge feels have in them the "right stuff" to profit by the Republic; and those placed there by parents or guardians either unable to provide suitable homes for their boys or failing to control them. In every case possible the Republic boys councilor visits the boy in his home. If found to be a youth the Republic can help, he is taken on 60 days probation. Citizens are selected carefully, for all over California, and even in Arizona, there are boys who need the influence of the Republic, and as only about 70 can be cared for, the school is obliged to choose boys with the biggest possibilities for the making of true men.

Self government prevails. In fact, there is a government building and a jail. When a "citizen" fails to walk properly he is haled before the mayor or the magistrate, and if he is found guilty he is promptly "canned" or given a turn in jail.

Every boy is paid for his labor in aluminum "coin of the realm" which coin is good for the board, laundry or other service rendered by the "Republic."

Recognizing the fact that a man with no religious training is lacking in best citizenship, Mr. Lucas, the boys councilor acts as all 'round adviser and helper for the boys. Sectarianism is taboo but when Mr. Lucas learns as to a boy's tendencies or preferences in a religious way he encourages him so far as possible in that belief. If a boy comes from a Jewish home then he is reminded of Jewish new year and feast days and informed in that belief. Likewise if Protestant, Catholic or other belief.

Students of rural life have often remarked upon the influence good live stock exerts on a community. Go into the most prosperous sections and they usually will be found centers of live stock production—and it is not beside the fact, to say that in most cases the prosperity of the community is in direct proportion to the character of the live stock. Again, the most prosperous farmers and ranchers are usually live stock men. There is something about the association with good animals of any kind that makes a man bigger and broader and finer. There is a sentiment about the production of live stock that is lacking in most lines of business—and sentiment goes far to make life worth the living. Show me a successful breeder, and I will show you a man big in heart and brain—a man the community is proud of.

I know one of the most successful business men in this state, a banker and a lawyer, and this man once said: "If I had my life to live over, and knew as much as I know now, I would devote my life to growing improved live stock. Since starting a herd of pure bred cattle, I have found a greater satisfaction than I ever found in business, and I know I am a better man." Is it strange then, that if live stock can remake communities and men, that the George Junior Republic has found that one of the surest and easiest ways in which a boy's interest can be gained is through well bred animals?

And the statement, that a better man can be made by using a $500 cow than by using a $50 cow! Think that over. Did you ever hear a better argument for improved live stock? Frankly, I never did. If good animals make better men in that little Republic up at Chino, what about our larger Republic?

Not all the live stock on the farm are pure bred, but a beginning has been made, and the foundations for the herds of Holstein cattle and Duroc-Jersey hogs have been carefully laid.

It is Manager Condee's plan to build up the herds by breeding, rather than buying, and he proposes to develope the herds in the most constructive way. He is especially firm in his belief that long distance production in a herd is worth more than seven and 30-day records, and the herd is being handled along lines calculated to establish persistent milk records.

The herd of hogs is of more recent establishment but in the short time they have been a part of the live stock operations a considerable herd has been built up.

Mr. Condee has found that one of the best ways to stimulate the interest of the boys is through showing the Republic's live stock at the fairs. A sense of pride and a desire to excel is developed in the "citizens," and the acquaintance the boys make with other successful exhibitors serves to give them a new and valuable viewpoint.

Good buildings, naturally, are a part of the general scheme. A new milking barn, and milk house, both thoroughly modern, have recently been completed, and a cattle barn is now under construction.

As an institution, the Republic is destined to be a factor in the live stock development of Southern California, and it will surely serve as a splendid testimonial to the value of improved live stock in the development of better men and communities.

Prize Calves Make Prize Boys

The prize-winning senior heifer calf Ida De Kol Lyons, fitted and shown at the Riverside fair by citizens of the George Junior Republic.

Agricultural News Notes of the Pacific Coast

Northern California

Many silos are being filled on farms in Grass Valley.

Esparto, Yolo County, is to have a new condensed milk plant.

Cordelia, Solano County, reports many cherry orchards showing heavy bloom.

Olive growers in the Roseville district of Placer County are getting $200 a ton.

A sale of 80,000 acres of timber land has been made in the Klamath Indian reservation.

On the first night of the salmon fishing season on Eel River 100 tons of fish were brought in.

Late planted beans in the Sacramento Valley have had their yield increased by early rains.

Five thousand acres more than last year's wheat plantings have already been pledged in Butte County.

Twelve thousand acres of beans are being harvested in the Natomas district, north of Sacramento.

The farm bureau of Placer County has purchased a tractor to help in preparing small tracts of ground.

With the close of the deer season it is estimated that more than 100 were killed in Nevada County alone.

Cattle and sheep which have been pasturing in the Tahoe national forest are being sent out to winter grazing lands.

Harry P. Stabler, formerly county horticultural commissioner of Sutter County, is again a candidate for that office.

Eight dredgers and six ditchers are at work in district 1500 of Sutter Basin. It is anticipated the work being done will reclaim 66,000 acres.

The government will grade rice this year and for that purpose has taken over the office of the Pacific Rice Growers' Association at Sacramento.

There has been an early snow fall at Summit in the Sierras which has warned stock men to rush their grazing herds out as quickly as possible.

California's honey crop for 1918 is valued at nearly two million and a half dollars by Manager Massey of the California Honey Producers' Cooperative Exchange.

The Nevada County farm bureau plans to hold its annual farm meeting early this month in Grass Valley. There are 13 local centers in the county organization.

Four hundred head of beef cattle driven down from Big Valley were shipped from Redding to San Francisco markets last week. The bunch was valued at $48,000.

The September and October rains caused considerable damage to crops in the Sierra Valley of Sierra County. There is some compensation in the green pasturage afforded.

Supervisors of Nevada County have been requested to double the bounty schedule on predatory animals. This request is made at this time because of the campaign urging farmers to raise more sheep.

The Butte County board of supervisors has petitioned the priorities board to postpone until after the war construction of the bridge on the Oroville lateral of the state highway across the Feather River. The board considers the expense not justified by war needs.

Central California

Manzanillo olives are now being harvested in Tulare County.

Tulare County growers of pomegranates are receiving $1.50 for a half box net.

Four carloads of cattle were shipped last week from Indian Wells, Kern County.

Potato growers of the Salinas Valley are planning to organize a marketing association.

W. Flanders Setchel of Fresno estimates the rain damage to Muscat raisins at 25 per cent.

Many raisin growers of Fresno Country are planning to buy hogs to feed on damaged raisins.

The Oakdale Almonds Growers' Association has shipped out eight carloads of nuts this season.

Because of the demands of the rice growers the irrigation season of the Oakdale district was prolonged three weeks.

An average price per head of $90.50 was secured at the sixth semi-annual auction sale of Poland-Chinas, held at Hanford October 9.

Mayor Edw. Berwick of Pacific Grove is purchasing necessary tools to plant and cultivate potatotes in the yards and gardens of that town.

Plans are being made for establishing schools for the children of fruit workers who go from section to section following the fruit harvest.

Supt. Chenoweth of Bakersfield has suggested that the school trustees close the schools for three weeks that the children may help pick cotton.

The first carload of Terra Bella canned tomatoes was shipped East for government use. The entire season's pack has already been disposed of.

Hanford creameries paid out $250,000 for cream checks last month. The highest price was paid by the Corcoran creamery, 68.7 cents for sweet cream.

At the recent semi-annual consignment sale of the Kings County Poland-China Breeders' Association 80 head of pure breds were sold at prices ranging from $100 to $265.

The Madera Weekly Tribune reports that 60 boys and 70 girls of the Madera high school worked with the raisin growers in saving the raisins threatened by rain damage.

An irrigation committee to guard against waste of water in Merced County has been appointed by the state council of defense. It is composed of W. C. Dallas, J. F. Clyne and J. F. Grass Jr.

A farm labor conference has been called for November 8 at San Francisco. All state organizations have been asked to send delegates, the conference to be held in the office of the state council of defense.

The prune and apricot exposition held at Mountain View, Santa Clara County, attracted a large attendance. In addition to the exhibits of dried fruit there were displays of all other agricultural crops, rabbits and poultry.

The state council of defense has three branches of a rolling tractor school ready for operation. One will move southward from Madera, one north along the Coast from Ventura County, and the third north up the valley from Modesto.

Southern California

Bean threshing is on in the Talbert section.

Feeder cattle are coming into Brawley from Arizona.

Imperial Valley's 1918 turkey crop is estimated at 80,000 birds.

New York has paid the record price of $19.00 per box for Valencias.

Sales of Valencias are being made in New York around $14 and $15.

Imperial Valley's 1919 cantaloupe acreage will be 50 per cent over last year's.

Forty-five per cent of the tomato pack has been commandeered by the government.

The San Bernardino Beekeepers' Club made a splendid exhibit at the Riverside fair.

Manager Gregg of the Whittier Walnut Association says the local crop will total 1000 tons.

Barley growers are relieved to learn of an order for immediate delivery of 10,000 tons of barley at $2.28 a hundred.

Imperial Valley ranchers have been notified that plenty of Mexican labor is available for the cotton and corn harvests.

Some 50,000 acres of wheat will be planted in the Imperial Valley this winter, according to the estimate of Walter A. Packard.

Oranges are at present beating lemons as best sellers in Eastern markets, presumably because oranges need no addition of sugar.

By the burning of an auto trailer, on its way to Los Angeles, 200 packed boxes of fancy apples from an Oakglen ranch were destroyed.

Yucaipa Valley in San Bernardino County expects to harvest 250,000 boxes of apples, mostly Jonathans, King Davids and Winter Banana.

Short courses in beekeeping will be conducted by the state university at San Diego and Riverside, the Riverside school being held from December 16 to 21.

The California Association of Nurserymen will hold its annual meeting at Riverside at the time of the State Fruit Growers convention, the third week in November.

The Orange County Produce Growers' Association is sending East two carloads of tomatoes daily. Last year Orange County shipped tomatoes as late as the 22nd of December.

E. A. McGregor, director of cotton investigations in Imperial Valley, is planning an expedition into Lower California to investigate the boll weevil and other cotton pests.

The California Lima Bean Growers Association has made its last payment on the 1917 pool. The growers in the association netted $11.58 a hundred pounds for their 1917 beans.

The California Lima Bean Growers Association has made its first payment on the 1918 crop. Checks for five cents a pound on gross weight were sent to all growers who delivered beans in September.

For the purpose of planning how to increase the bee business in Southern California, the supervisors of the Angelus, Cleveland and Santa Barbara forests will meet in consultation with two representatives of the bureau of entomology at Washington, Dr. E. T. Phillips and George E. Demset, at Los Angeles, November 23.

The Coast and General

The apple crop of the Northwest has suffered this year from worm damage.

A cablegram from China states that the Chinese cotton crop is estimated at 25 per cent above normal.

Potato growers are protesting against the limitation of the diversion privilege on fruits and vegetables.

Canadian fruit growers will next year be required to use standard containers for all fruits. The new law becomes effective June 1, 1919.

Vegetable growers on the Isle of Pines, south of Cuba, are relieved by the recent food administration ruling that winter vegetables are a "necessity."

It is reported that only 10,000 to 15,000 bales of hops have been picked by Oregon growers, the rest of the crop being abandoned because of lack of demand.

The Hood River Creamery, a cooperative concern organized by Hood River, Oregon, orchardists, was destroyed by fire, but has been rebuilt and is now ready for business.

The second "live stock squad" of the agricultural extension service of the University of Arizona is now touring the Counties of Graham, Greenlee, Cochise, Santa Cruz, Pima, and Pinal.

Dairymen of Washington County, Oregon, have requested the federal food administration to allow all wheat grown in that section to be milled there so that stock may get full benefit from the bran and shorts.

Prune orchards in the district about Monmouth, Oregon, are yielding so heavily that it is impossible to find sufficient dryer accommodations and considerable fruit has been wasted. The crop is 100 per cent larger than ever before.

The food administration has appointed a committee to investigate the dairy products situation and see what can be done towards stabilizing the butter market. The large government purchases have produced a shortage and prices are running wild, especially on the Pacific Coast.

Hearings upon the proposed official standard for oats were held in Portland and Spokane the last week of October. Upon the basis of the information received at this series of hearings the bureau will announce the standards agreed upon as soon as the information can be compiled and applied.

The maximum rate of $1.10 per hundred pounds on Washington, Idaho and Oregon apples to Atlantic seaboard points has been agreed upon by the railway commissions of the three states, shippers and the railroad administration before the interstate commerce commission. This rate takes the place of the rate of $1.25 recently authorized by Director General McAdoo.

A tractor demonstration planned by farmers, managed by farmers and pulled off in the presence of 2000 farmers was the feature of the Weld County, Colorado, fair. Every official connected with the event was a farmer, and the purpose of the demonstration was to show what tractors could do under real farm conditions. All spectacular stunts were barred, and the demonstrators held down strictly to ordinary farming operations.

Rice---California's New Profitable Crop

By R. L. Adams

CALIFORNIA'S 1917 rice crop amounted to over 36,000,000 bushels, produced from 80,000 acres. California now stands fourth among the eleven rice producing states of this country.

In the rice plant has been found a satisfactory solution for the profitable utilization of thousands of acres of level, smooth, valley lands in the Sacramento and San Joaquin Valleys of California, which for years have been the haunts of millions of wild geese, and if utilized at all were drawn upon only for a limited amount of cattle pasture.

Underlaid with a stiff, tenacious hardpan coming too near the surface to permit of profitable farming to wheat, barley, alfalfa or the usual field crops, these lands offer ideal conditions for rice. As a result, lands formerly condemned as worthless by expensive experience and eagerly sold for $10 and $20 an acre now command prices of $40 and $50 per acre and in some instances are being sold today for rice growing as high as $75 and $100 and in a few instances at $125.

Within a short period of seven years the acreage of rice plantings in California has jumped from a few small experimental plats to plantings which promise a total of 150,000 acres in 1918.

California rice is planted in April and May after all danger from spring frosts is over, on lands prepared as for any grain crop, by plowing the land and harrowing or disking until in shape for drilling the seed.

Growers in working their lands aim to hold the winter rains for germinating the rice for the sake of the greater warmth rather than to rely upon irrigation for the necessary moisture. Warmth is very necessary to start the sensitive young rice plants and to give them the necessary impetus.

When the plants are six to eight inches high they throw out white water roots, the sign for turning on the water. From then on until time to drain for harvest, the plants are kept continually in water, maintained at a constant depth of from two to four inches. About the time the rice kernels are as the farmers say "in the dough," which means that the content of the kernel is in the transitory stage between water and its final mature hardness, the land is drained. The grain should ripen in water, but its harvest would then be attended with such difficulty that draining and drying out is brought about to such an extent that harvesting can be accomplished with the combined harvester, with reapers, or by mowing and stacking.

To properly handle the water the lands are carefully leveled and checked in small checks with low levees. Supply ditches and drains are built exactly to grade, and numerous structures provide for the ingress and egress of the water. Great care is exercised in providing the land with a proper level so that the water will stand evenly over the entire check, for if the water depths vary the crop will ripen unevenly and shattering of the more mature grain will result at harvest time.

While a great many varieties of rice have been tried out in California, popular choice is for the Japanese varieties, in preference to the Honduras, Italian or the North Carolina kinds. Of the Japanese the Wataribune hold the first place for popularity with the growers. It is well adapted to the climatic and soil conditions in the rice growing sections, producing yields of from 2000 to 8000 pounds per acre of well formed, short, rounded, flinty kernels, worth in the neighborhood of $2.15 per hundred pounds to the grower during normal times, but jumping to over $3.00 in 1917. At the usual market price this represents an acreage return of from $40 to $125 per acre.

The presence of hardpan is not in itself essential to rice culture, as the rice plant is not especially exacting as to soil. But since the crop must stand with its roots in water for a period of three or four months to bring it to maturity, and evaporation is great in the long, hot season demanded where the crop is planted, a great deal of water is required. Since the rice will find soil enough to provide it with a footing on the hardpan lands, the hardpan in itself will reduce seepage to a minimum, thereby resulting in a natural saving of irrigation water.

To Balfour, Guthrie & Co. belongs the honor for the first commercial industry in California rice growing. Under the direction of their superintendent, William Grant, many varieties of rice were tried out in the vicinity of Biggs: the result of their experiments going far to introduce the rice plant to the California farmer.

In the San Joaquin Valley the first real attempt at growing rice commercially was made in 1913 by Miller & Lux Inc., big cattle and grain people. So pleased were they by their success that each annual planting has been materially increased over the acreage of the preceding year. The soil selected in the San Joaquin Valley is usually a stiff gray adobe, with no hardpan, but very impervious to water and very rich. In the past the land had not proved profitable for barley, alfalfa and the like, as in drying out it cracked badly, damaging and exposing the roots of all plants tried in it. But the rice plant finds here conditions ideal for growth.

Sacramento Valley Paddy Field
Blue Rose rice in boot near Biggs, Butte County.

Ready for Harvest In San Joaquin Valley
Wataribune rice ready for harvest near Bakersfield, Kern County. This field has water table at about two feet and was seriously infested with Bermuda which has been entirely eradicated.

The usual yields obtained by experienced growers operating under fair conditions of soil, water, climate and acreage amounts to about 2000 pounds per acre of rough rice; 4000 pounds is considered a good yield, although exceptional yields of 6000 pounds are by no means unknown.

In general the production of the good crop, 4000 pounds, will cost for the preparation of the land, seed, seeding, growing the crop, harvesting, clearing, sacking and delivery to the warehouse in the neighborhod of $40 per acre. The remaining $46 is gross profit which goes to repay the operator for his services, to cover interest, depreciation and similiar overhead charges. In general the net returns from a good crop of rice will give the land a business valuation of $125 per acre after deducting all costs of production and overhead charges.

So firmly established has the industry become that seven mills scattered over the state are now prepared to convert the field product into a finished marketable article.

So far no insurmountable obstacles have been encountered in marketing the crop. Already with the usual California progressiveness, certain San Francisco restaurants advertise "California Grown Rice" as a special dish.

California rice culture is, however, still in the experimental stage. There is much to be learned before production, preparation for market, and marketing is sufficiently standardized to be entirely stable. Growers recognize this fact and the Pacific Rice Growers Association, with a present membership of 225, is trying to bring about certain definite betterments in the rice industry, such as more scientific production methods to reduce the output of inferior rice, a proper system of grading and standardization, a publicity campaign, securing of federal legislation to protect the infant industry, promotion of a spirit of cooperation and scientific collective marketing.

Walnut Worm Threatens Industry

By Prof. Ralph E. Smith

THE worm, or codlin moth, which is attacking the walnuts in certain parts of Santa Barbara and Orange Counties has become such a serious matter that immediate action is necessary to keep it from spreading all over Southern California.

Importance

In some orchards where the worm

Continued on Page 442

Harvesting Walnuts

SPECIAL FERTILIZER OFFER

We are now in position to furnish, in any quantity and for immediate delivery, ground Goat manure, in bulk, at Twenty ($20.00) Dollars per ton f. o. b. your station, carload lots, within an 80 cent per ton freight rate from Colton, California. This material is finely ground, and in good mechanical condition.

The fertilizing qualities of Goat manure are so well known that it is not necessary to extol same here. Sufficient to say that what we are offering here will analyze 2.00 per cent to 2.75 per cent Nitrogen; 1.00 per cent to 1.75 per cent Phosphoric Acid; and 2.50 per cent to 5.00 per cent Potash. With present and prospective high prices for all citrus crops you cannot afford to overlook an investment in THIS fertilizer. Samples sent on request.

Southern California Fertilizer Co.

602 to 610 Kerckhoff Bldg., 6th and Main Phone 60329 LOS ANGELES

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The Choice of Those Who Know

Manufacturers and leading motor car distributors *recommend* ZEROLENE. The majority of motorists use ZEROLENE. ZEROLENE reduces wear and gives more power because it keeps its lubricating body at cylinder heat. Gives less carbon because, being refined from selected California asphalt-base crude, it burns clean and goes out with exhaust.

ZEROLENE is the correct oil for *all types* of automobile engines. It is the correct oil for your automobile. Get our lubrication chart showing the correct consistency for your car.

At dealers everywhere and Standard Oil Service Stations.

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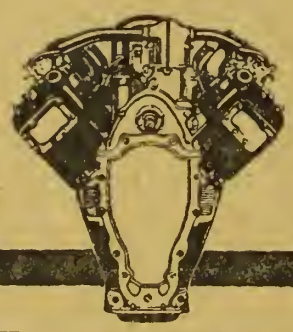
The Standard Oil for Motor Cars

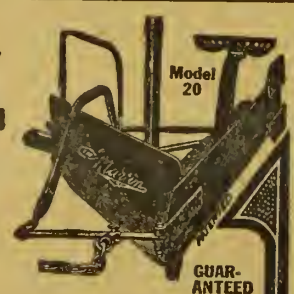
Correct Lubrication for the "V"-Type Engine

This, the "V"-Type of automobile engine, like all internal combustion engines, requires an oil that holds its lubricating qualities at cylinder heat, burns clean in the combustion chambers and goes out with exhaust. Zerolene fills these requirements perfectly, *because it is correctly refined from selected California asphalt-base crude.*



Easy Ditching

THE "good old days" of a pick and shovel have become memories. Instead of spending a week on a mile of ditch, Mr. Farmer now completes the job in a few hours. He does a better job, too—and saves a BIG LOT of *valuable* time. He does it with THE Martin



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Makes new ditches; cleans old ones; grades roads; builds dykes and terraces. Cuts alfalfa, Bermuda grass or sweet clover roots from ditch banks, without plowing. Does more work and better work than 100 men with old methods.

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All steel. Reversible. Adjustable. No wheels, cogs or levers. More MARTINS now in actual use than all other farm ditchers combined. Warehouses and distributing points in nearly all Western States. Write for free descriptive catalog and nearest distributing point, together with list of MARTIN users near you.

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Lightning proof— Weather proof— **Roofing Products**

For lasting service and fire protection use metal roofing—adapted to rural and city properties.

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When writing advertisers, mention The Cultivator.

Interior of Walnut Packing House

Interior view of Irvine Walnut Association's new packing house in Orange County.

WALNUT WORM THREATENS INDUSTRY

Continued from Page 441

has been present for several years fully 50 per cent of the nuts on the trees are wormy. In many groves over 20 per cent of the crop is affected. The damage is gradually increasing from year to year and at the same time the pest is spreading into new territory. Many hundreds of acres are now affected and steadily growing worse. The wormy nuts make the worst kind of culls, as they are not only a total loss but also very hard to find in culling. A large amount of extra hand labor is required and even then some of these nuts get by. The profits from a grove 50 per cent infested are cut almost in half.

Nature of the Pest

The insect in all stages looks exactly like the common codlin moth. Its occurrence in walnuts, however, shows no connection with apple or pear trees and, judging from its feeding habits, it is a different form from that which ordinarily attacks those fruits. In France and other parts of Europe walnuts are commonly attacked by a similar form of codlin moth. Most of the worms leave the walnuts in the fall and hunt some hiding place where they spin a cocoon and pass the winter. In the spring these worms turn into moths and lay eggs upon the walnuts and thus start a new generation. Such places as under the rough bark of trees, in cracks in the trays or buildings and inside the sacks where wormy nuts have been are favorite ones for the worms to pass the winter.

How the Worm Spreads

In sections where walnut orchards are close together the insect gradually distributes itself from one ranch to another. Its spread into new territory has taken place largely by sacks, taken from infested orchards or packing houses into uninfested places. The worms crawl out of the nuts into the sacks and in the packing house they crawl into other sacks and all over the house in their search for a hiding place. Thus if only one patron of a certain house has the worm in his trees all the others will get it sooner or later. There are actually many cases where orchards far removed from other walnuts have become infested through sacks.

Beware of Sacks

Sacks are the chief danger in spreading this pest, unless wormy walnuts or shells are carried to places close to walnut orchards. All walnut growers are urgently advised to observe the following:

In non-infested districts allow no sacks, walnuts or shells to come onto the ranch from infested territory. If there is any doubt about sacks dip

Continued on Page 447

Nuts Affected by Worms

1. Appearance of green nut after codling worm has entered on open side.
2. Codling worm usually enters green nut on the stem end as here shown.
3. A round or oval opening on the stem end of the cured nut is almost a sure sign that the codling worm has paid his respects inside.
4. Section of walnut showing the codling worm doing its work.

How many kills to YOUR *shot pattern?*

MOST hunters agree that three shot pellets or more are essential to a *kill*. Less than three may mean a *cripple*, no matter what the size of shot or its velocity. Hence uniform pattern, i. e., an even spread of shot is essential to successful shooting, in the field or at the traps.

The secret of good patterns is in the *control* of the powder explosion. Good, evenly distributed patterns are the direct results of a correct system of wadding scientifically adjusted to the bore of the gun and the load. The wadding, like the piston head of a gas engine, must give the explosion something solid to work against, so that the shot may be *pushed* out evenly.

It must expand and fill the tube of the barrel, completely sealing in the gas behind it. No gas must escape to scatter the shot.

It must offer just the right amount of resistance to the explosion so as to develop uniform pressure and high velocity without danger of jamming the pellets out of shape at the "choke" or muzzle constriction.

The Winchester system

Winchester Wadding is the result of repeated experiments to determine the most efficient control of the gas blast.

The special construction of the Winchester *Base Wad* gives what is known as *Progressive Combustion* to the powder charge.

Combustion spreads instantly through the powder charge. By the time the top grains of powder become ignited the *full* energy of the burning powder behind is at work.

Though the explosion is almost instantaneous, it is none the less *Progressive*, the final energy and maximum *velocity* of the completely burned powder being developed at the *muzzle* where it is most needed.

Meanwhile, under the heat and pressure of combustion, the tough, springy, *Winchester Driving Wad* has expanded to fill the barrel snugly all around. No gas escapes. It is completely sealed in. The wadding *pushes* the shot evenly.

At the muzzle the shot pellets slip out without jamming while the wadding is checked for a brief interval by the constriction of the muzzle. *It follows some distance behind the shot pattern.*

The shot cluster travels on unbroken by gas blast or wadding and makes the hard hitting, uniform pattern for which Winchester shot shells are world famous.

Fish Tail Flash. All Winchester smokeless shells are made with the new Winchester Primer—the quickest and most powerful shot shell primer made. Its broad *fish tail* flash gives even and thorough ignition. Every grain of powder is completely burned up before the shot charge leaves the muzzle.

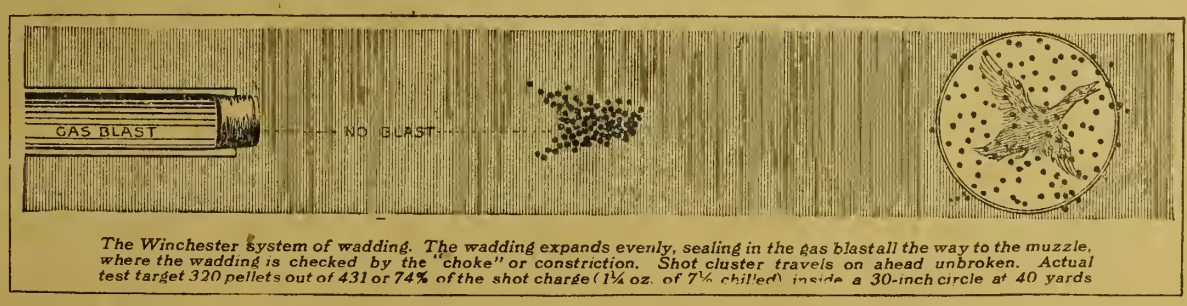
The Crimp. The required degree of pressure necessary in seating the driving wads is worked out in combination with the *hardness* or the *softness* of the *crimping* required for any particular shell.

Waterproofing and lubrication. In the cold damp air of the marshes, or under the blazing sun at the traps, Winchester shells will always play true. Winchester waterproofing process prevents them from swelling from dampness. Special lubrication of the paper fibres prevents brittleness and splitting in dry weather.

Uniform shells. From primer to crimp, Winchester shells are constructed to insure the maximum pattern possible from any load and under all conditions. $100,000 is spent annually in the inspection and testing of finished shot shells. 25,000,000 rounds of ammunition are fired every year in testing guns and ammunition.

Clean hits and more of them

To insure more hits and cleaner hits in the field or at the traps be sure your shells are Winchester Leader and Repeater for Smokeless; Nublack and New Rival for Black Powder. Write for our Free Booklet on Shells. **Winchester Repeating Arms Co., Dept. XX-41, New Haven, Conn, U.S.A.**



The Winchester system of wadding. The wadding expands evenly, sealing in the gas blast all the way to the muzzle, where the wadding is checked by the "choke" or constriction. Shot cluster travels on ahead unbroken. Actual test target 320 pellets out of 431 or 74% of the shot charge (1¼ oz. of 7½ chilled) inside a 30-inch circle at 40 yards

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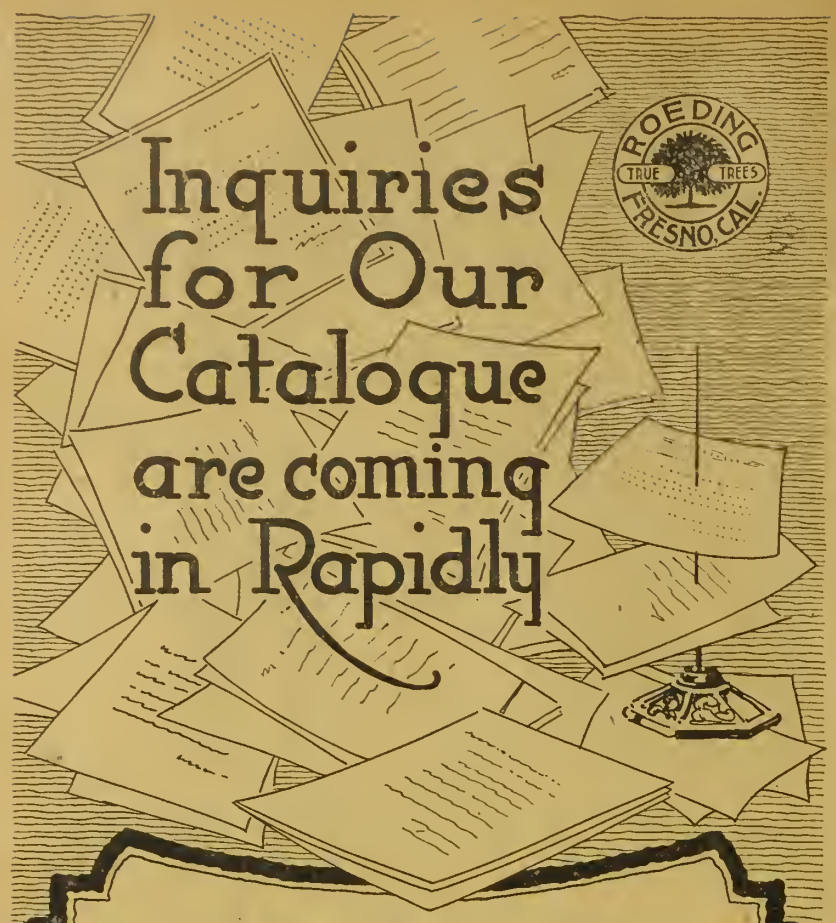

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Our fine big illustrated catalogue is a practical planter's guide—useful to both beginners and experts, tells what to plant and how to make fruit growing more successful.

Lists and describes hundreds of tried varieties of deciduous citrus and ornamental trees, vines and roses. Gives information that you should know before planting.

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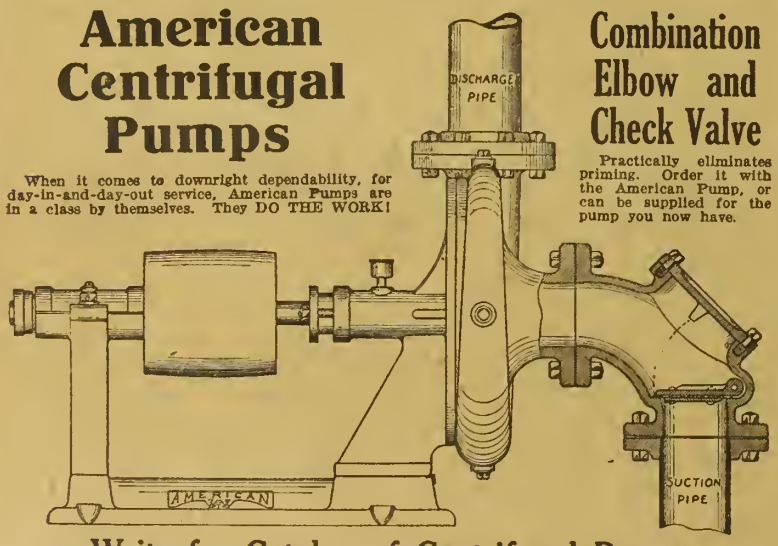
Practically eliminates priming. Order it with the American Pump, or can be supplied for the pump you now have.



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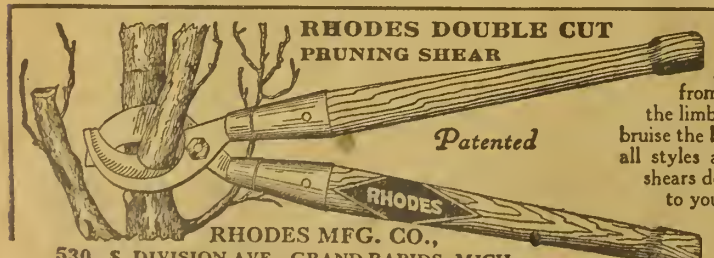

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Grape Syrup

WHAT will California do with its 400,000 tons of wine grapes? Also what will it do with its other thousands of tons of raisin and table grapes which, in a season like the present, will, because of weather conditions, suffer great loss? The University of California has issued a bulletin in which the question was discussed, especially from the technical side, or the possibilities of manufacturing and marketing.

Now comes the state viticultural commission with Bulletin 12, "Grape Syrup: Possibilities of Production in California." In the formal statement the bulletin says:

There enters into the situation the question of the salvage of normally more than 400,000 tons of grapes, including many thousands of tons of second-crop table and raisin varieties that ordinarily have found their way to the wineries, but which, in the event of prohibition laws would not find such avenue of disposition.

The present season, because of early rains, has rendered large quantities of table grapes useless for shipment through the usual outlets, and in addition has caused considerable damage to the raisin crop.

It appears to this board, therefore, that there may be developed a means by which a part, if not all, of the crop might be saved in future years, providing a demand may be created for large quantities of grape syrup.

It is a well known fact that syrup can be made from grapes. The undertaking prompts the following thoughts:

Will it be necessary to market the finished product against the cheapest corn syrup commonly used?

What will be the effect when conditions again become normal in the sugar market?

How long would it take to create a market for 20,000,000 gallons of syrup?

What woud the cost of production of syrup be per gallon based on the payment of $15 or $20 per ton for grapes to the vineyardist?

What price per ton for grapes would make an inducement to the grower to retain his wine grape vineyard in a dry wine section, and in a sweet wine section?

Is it practical to work on the basis of producing an article to compete with a high grade syrup, such as maple, already on the market?

There is nothing novel about the idea of making grape syrup. It has been made in thousands of homes for many years, but the article has never been manufactured in an extensive or perfected way commercially, so that the whole consuming public might judge of its merit. The thought now is to make the best of an approaching situation which may bring great loss to thousands of people unless a plan is devised for taking care of a tremendous yield of grapes that heretofor has been made into wine in California.

A conference was recently held at Oakland. At the opening of the meeting Secretary Sheehan said:

"This board is charged with fostering and protecting all of the branches of viticulture and in compliance with the statute creating this department of the state government we are concerned in the welfare of the table grape man at this time. The rain damage affected particularly the northern section of the San Joaquin Valley, the Sacramento Valley and points north of Sacramento. A number of people in the table grape business find themselves possessed of grapes which are not marketable as such but which may have some value in other directions. There is quite a hazard in shipping East fruit that does not leave here in good condition.

"At Sacramento recently, a hurried meeting was called by the chamber of commerce. Professor Cruess, of the University of California, and representatives of the Japanese Agricultural Association were present and quite a lively discussion was entered into in relation to the salvage that might be gotten out of table grapes by converting them into grape syrup. Mr. Serailian, who has experimented largely in the making of grape syrup, was also in attendance at the meeting. These Japanese gentlemen present at this meeting are going to state to the board just what the plight of their people is in the vicinity of Florin and Elk Grove, where grapes are so badly damaged that they are not marketable as table grapes. Owing to the probable doing away with wineries next July, whatever solution is found at this time will be valuable in the way of good for future years when similar conditions may prevail.

After general debate of the question the conference adjourned, and the bulletin concludes:

The members of the board discussed the subject further, and the consensus of opinion was that what ever plan might be attempted in the direction of producing grape syrup should have as its aim the development of a highly perfected product. The decoloring process was not considered of the same importance as the matter of retaining the flavors. The present evaporating machinery in possession of some of the wineries was considered available for some practical experiments, but not serviceable for the retention of flavors unless improvements were added to it. These additions would require some time and it was not considered possible to enter into practical demonstrations on a large scale during the present season.

There is information at hand indicating that before another season has approached, modern machinery made of aluminum or lined with silver and equipped with flavor-saving devices will be installed by local and Eastern capital with a view of thoroughly testing the possibilities of a venture of the nature of grape syrup and grape extracts. Such undertakings will be encouraged in every way possible by this board.

Seedless Raisin Grapes

BULLETIN 298 issued by the agricultural experiment station of the state college of agriculture, by Frederick T. Bioletti, gives complete information regarding various types of raisins in California, a comparison of Muscats and seedless raisins with full list of varieties and some most practical cultural suggestions. Regarding planting:

Preparation of the Ground

The best results can be obtained with vines only if the ground is properly prepared before planting. The seedless vines are not exceptions to this rule. The ground should be cleared of stumps and rocks, properly levelled, especially where irrigation is to be practised, and plowed as deep as is practicable, at least ten inches. Any troublesome weeds, such as Morning Glory, Johnson grass or Bermuda grass should be eradicated before planting. Hardpan within three feet should be blasted at every point where a vine is to be planted. A few years as an alfalfa field is an excellent preparation. In irrigated districts, a crop of cow peas or similar leguminous crop grown in the summer and plowed in deep during the autumn prepares the soil perfectly for planting during the following spring.

Planting Stock

For planting, cuttings, rooted vines, or bench grafts may be used.

Cuttings are almost as good as rooted vines if they can be made to grow during the first year. The Sultanina, however, is rather hard to root and many usually fail during the first year. The result is that much replanting is necessary, the vines are uneven in size, the vineyard is slower coming to full bearing, and the cost in the end may be as large or larger than when rooted vines are used. The best cuttings are those of medium size with fairly close joints. Well grown laterals of the Sultanina often make the best cuttings. The other varieties root more easily. In most cases, it is best to use one year old rooted vines of moderate size. If of good quality and properly handled, practically every one will grow the first year and a full crop may be obtained the third or fourth season following planting.

In districts infested with phylloxera, bench-grafts on resistant stock must be used. These are more expensive,

but are the only known defense against the pest. The extra cost is in part counterbalanced by the fact that the vines on resistant stocks bear earlier and perhaps better than on their own roots. Many varieties of resistant stocks have been tested at Kearney and Davis. All have given good to very good results with the Sultanina and Sultana. The Corinths seem to be more difficult to please and the other varieties have not been very thoroughly tested.

With the Sultanina, the Riparia plus Rupestris hybrids 101 minus 14, 3306, 3309, have given the best results, and St. George has done fairly well. The Sultana has yielded best on 1202, though all other stocks have given good crops. The Black Corinth has done best on 3306, 41B and Riparia Gloire. It has failed to grow on 420A for which apparently the affinity is defective. The White Corinth has given its largest crops on 3306. Both Corinth grapes have done poorly on St. George.

Laying out the Vineyard

In laying out the vineyard, two points have to be determined: (1) the area to be given to each vine, and (2) the arrangement of the vines.

As all seedless vines are vigorous growers, they require abundant room. If crowded, they may give a little more in the first one or two crops, but the yield will be less later and the cost of handling greater. The appropriate space for each vine will vary from about 70 square feet to about 130, according to the variety and the soil. The Sultana may be planted a little closer than the others without injury. In rich deep soil where the vines will be exceptionally vigorous, they must be given more room; in sandy, shallow or poor soil they may be placed closer.

As all these varieties require long pruning and trellising, the vineyard should be laid out on the avenue system. The following distances are recommended for good soil: Sultana, 14x6 feet; Sultanina, 14x8; Corinth, 16x8.

NEW ZEALAND MARKETS OPENED TO AMERICAN GRAPES

As the result of fruit market investigations carried on recently in New Zealand by a special investigator of the bureau of markets, United States department of agriculture, cooperating with the American consul general at Auckland, grapes from the United States henceforth are to be allowed entrance into that country. Heretofore imports of the fruit into New Zealand have been allowed only from Australia.

It is found that large quantities of grapes are consumed in New Zealand, but owing to the opposite growing seasons in that country and the United States, the only grapes in the market during the American season are from hothouses, the prices ranging approximately from 25 cents to 75 cents a pound. It is believed that the opening of the New Zealand market will afford in time a fairly substantial outlet for California varieties such as the Malaga and Red Emperor.

WASTE PRUNES

Prof. W. V. Cruess of the University of California has been making investigation as to a syrup made from damaged prunes. A juice of about 15 per cent sugar is extracted with hot water, acid reduced by lime or precipitated chalk and evaporated in a vacuum pan to about 70 per cent syrup. It has been found that a ton of prunes will yield about 35 to 45 pounds of syrup. Other uses to which these damaged prunes may be put are the manufacture of alcohol, or prune butters or jams, or it has been found that they make excellent hog feed and fine fertilizer.

NATIONAL APPLE DAY

National Apple Day is observed each year the first Thursday in November. This year it will be November 7. Some large apple producing sections are holding apple festivals with proceeds to go to the Red Cross and are otherwise attracting attention to the day, and incidentally to the fruit which keeps the doctor away.

The sum total of any man's success and happiness is measured by his ability to give.

Oakland

PARTICULARLY under present conditions can the all-year transportation needs of farm families be well entrusted to the Oakland Sensible Six Sedan. Its exceptional fitness is based on its scientific light-weight construction which makes this Sedan weigh 300 to 500 pounds less than others of similar wheelbase, roominess and completeness. Principally for this reason it is unusually quick, active and economical, affording utmost service at low cost. Further evidence of the high utility value of the Oakland Sensible Six Sedan is noted in its large floor and seating space, permanent pillars, wide doors, efficient heater, and durable fittings.

The high-speed overhead-valve Oakland Sensible Six engine delivers 44 full horsepower at 2600 r. p. m., or one horsepower to every 56 pounds of car weight in this Sedan model. Oakland owners regularly report gasoline returns of from 18 to 25 miles per gallon and records of from 8,000 to 12,000 miles on tires.

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Your Wife Should Be Considered

Mr. Farm Owner:

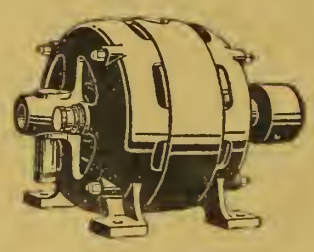
You may have fitted up your farms and out-buildings with electric, labor-saving devices, but have you considered the *lady of the house?*

An electrically driven washer, mangle, vacuum cleaner and other household devices will greatly lessen her work and add to her comfort.

A few words to your lighting company suggesting as a preference G-E MOTORS will repay you for the trouble.

Washing Machine

Vacuum Cleaner



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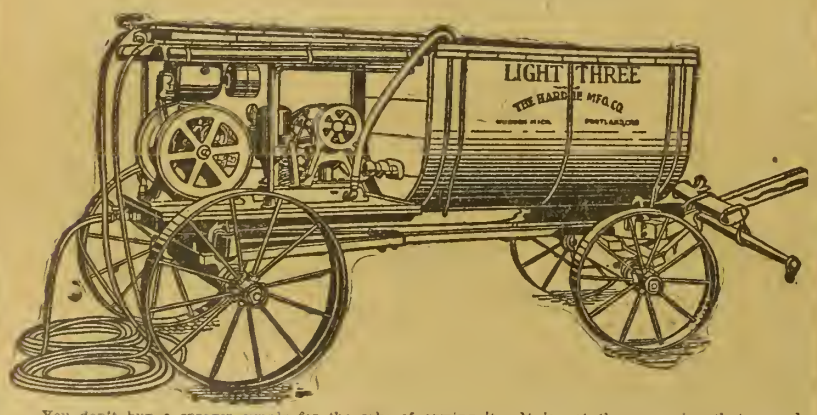

You don't buy a sprayer simply for the sake of owning it. It is not the possession that appeals to you. It is the service the sprayer gives you. We could do things at less cost, but what would we have gained? A cheaper sprayer never satisfies. It gives trouble, requires repairs, fails when you need it most, and wears out quickly.

The Hardie Quality Is Like Paying Less

Saving money is the same as making money, therefore every HARDIE SPRAYER pays dividends to you through its low upkeep cost and its greater durability. High pressure, light weight, large capacity, powerful engine, perfect agitation, simple construction, and the tank refiller. The HARDIE SPRAYERS have features that are valuable in correct spraying, and not found in others. Send for the spray catalog, it is worth your time; the truth is there, backed by the largest exclusive spray pump manufacturer. Place your confidence in a Hardie and your spraying will be a success.

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Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 426982, grand champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Building, San Francisco — *CARRUTHERS FARMS, Live Oak, Cal.*

Horticultural Week

THE entire force of the state horticultural commission and a big committee in Riverside are preparing for a big week November 11-16. It is to be a great five ring proposition under the auspices of the state horticultural commission. Commissioner Hecke is sending out the following live wire appeal:

Do you want to hear speakers of national reputation on the war, food production, labor and other important agricultural questions of the day?

If so attend the 51st State Convention of Fruit Growers and Farmers.

Do you know the relation of nurserymen to our horticultural industries?

The California Association of Nurserymen for the first time are holding their annual convention in conjunction with the Fruit Growers and Farmers.

Do you know that no state can effectually prevent the introduction of plant pests and diseases without the cooperation of her neighbors?

With delegates from every Western state and from the United States department of agriculture attending the First Interstate Plant Quarantine Conference a uniform policy of plant pest exclusion for the states of the Pacific slope will be accomplished.

Do you know California's war time need for more and better vegetables?

Vegetable standardization and pure seed certification are the objects of the First Vegetable Growers' Conference.

Do you know the activities of the county horticultural commissioners in the food campaign?

The annual convention of the State Association of County Horticultural Commissioners will develop into a united cooperative campaign with the state commission of horticulture for increased food production and conservation.

These five big conventions compose Horticultural Week in Riverside, November 11-16.

This is to be a real effort to unify and coordinate our energies for the work of the coming year under war conditions.

These are strenuous times.

There will be a strenuous program.

Tractor School Dates

The "flu" has played hob with dates arranged for the various units in California's various tractor training centers. We have word from J. C. Beswick, director vocational war work in California, that dates will be announced as soon as the present epidemic will permit. One school was opened at Madera by Unit No. 1, October 7, with Neil Mackay gas engine instructor and Frank Dye tractor instructor. The course in each center will last four weeks. The first two weeks are devoted to gas engine instruction, and the last two to tractor operation and repair and actual work in the fields.

Tractors available for work by the different units are:

Unit No. 1—One Holt 75, one Samson 10-25, one Best 40, one Fageol 10-25.

Unit No. 2—One Holt 75, one Samson, one Fageol 10-25.

Unit No. 3—One Best 75, one Samson 10-25, one Fageol 10-25, one Yuba 10-20.

The order in which the schools will open is indicated by the following list under each unit:

Unit No. 1—Madera, Reedley, Lemoore, Tulare, Delano, Brawley, El Centro, Hemet, Ontario, Santa Ana, Van Nuys.

Unit No. 2—Merced, Patterson, Oakdale, Lincoln, Gridley, Corning, Willows, Williams.

Unit No. 3—Saticoy, Santa Maria, King City, Salinas, Hollister, Santa Clara, Livermore, Concord, Napa, Santa Rosa.

Allies Make Large Purchase of Raisins

That raisins are at last recognized as a very important item on the rations of the soldiers of the Allies is evidenced by an order placed on September 14 with the Associated by H. Clay Miller, Pacific Coast representative of the committee on coordination of purchase for the United States and allied governments, for 15,826 tons of raisins. These raisins will be for the use of United States and allied troops.

The order was segregated as follows: 1500 tons of fancy seeded Muscats in cartons; 400 tons of Thompson Seedless in cartons; 1000 tons of three crown loose Muscatels in 10-pound tins; 34 tons of fancy seeded Muscats in 25-pound tins, 5630 tons of three crown loose Muscatels in 25 and 50-pound cases; 7260 tons of Sultanas in 25 and 50-pound cases.

Britain Is Heavy Purchaser

The greater proportion of the raisins, including the Sultanas. will go to the British government. Great Britain has a reputation of being a big raisin consumer. Ony a few years ago the consumption per capita in Great Britain was five times what it was in the United States, and this was one of the important arguments brought forward in favor of national advertising of raisins in this country.

We have made substantial sales of raisins to the United States government for the use of Uncle Sam's soldiers, and we are confident that in the future this government will be a much heavier purchaser of raisins than it has been in the past.

CITRUS SEMINAR

The University of Florida has held for the past nine years an annual seminar covering a period of some four or five days, and devoted to cultural problems of Florida. Citrus activities predominated but other agricultural topics were discussed. Oc-

Buy an Avery End Farm Slavery

The Avery is the simplest of all tractors. It does not need an engineer to run it. Every part is in plain sight and get-at-able.

The Avery Sells Here From $650 UP

The Avery costs less than any to buy and less than any for upkeep. It has patented California Lugs — these grousers enable it to work in Mud or Sand.

Write and let us tell you how to get a bigger yield with less work and at lesser cost.

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casionally there have been exhibits of live stock and this year the seminar, which was held in late September, was made a demonstration of tractors and farm machinery. The two questions, however, which seemed to attract the greatest attention, and which are of vital interest to Florida, were those of fertilization and marketing.

BEET GROWERS, ORGANIZE!

I notice that the sugar shortage will be as great the coming year as it has been in the past. I see no need for it and believe that some influential agent such as your editor could reliably recommend a solution for the problem to the proper authorities. The days when millionaires grow up like mushrooms are over. The stage being passed through by beet growers resembles the one experienced by citrus growers during the season of 1892-93. Cooperation solved the problem for the citrus growers. Could the beet growers not so organize, thereby handling the manufacture of sugar from the beets and market the product? Our federal government took over certain public utilities for the period of the war. Why couldn't our food administration take over at least one sugar factory, or organize beet growers and test the above solution? Now, is the time to act if we are to feed our Allied countries until victory is won and possibly during part of the period of reconstruction. — Harry Sargent, Riverside.

THE BARLEY SITUATION

With the closing of breweries in the United States after December 1, any temporary dislocation in the barley market should cause producers little concern. Barley is an excellent live stock and poultry feed, and also it will be used to a larger extent than heretofore in making flour. New methods of milling this grain yield an excellent flour for which there is an active demand.

The country will easily absorb the entire barley crop, according to food administration calculations, and the barley formerly used for brewing will, it is hoped, result in increased amounts of milk, meats, flour, poultry products and other important foods.

When barley is to be fed to live stock the grain should be crushed. Owing to the hard exterior of barley kernels, farm animals do not otherwise secure the greatest nourishment from it. The single exception is in feeding barley to poultry. When provided with ample grit, fowls derive full nourishment from the whole grain. This year's crops should assist materially in relieving the feed situation and the high level of prices for animal products makes the feeding of barley in excess of market demands both profitable and patriotic.

TO CALIFORNIA BEAN GROWERS

"Don't give away your beans," is the message from Manager Turner of the California Bean Growers Association. "There never was a time," he writes, "when the bean grower has had less warrant to get panicky. There is positively no indication of over-production; in fact, most important bean producing sections are below last year's averages. Present low price levels are due to the grower's own acts and his acts alone. Do not blame the broker, do not blame the dealer and do not blame the government. It is you, Mr. Bean Grower, and you alone, who are to blame. How do you expect the trade to buy in any quantity when you reduce your price from day to day? Would you buy your year's coal supply if the price was going down each day? Stand pat and demand a fair price for your product.

"Reports from Michigan are that the growers there are panicky, too, selling choice hand picked beans at $9.50 per hundred and even less. That is their business; let them do it; let them sell out; let them give their beans away if they want to, but they must blame no one but themselves.

"Common sense assures you the largest demand for American food products in the history of the world. There will be a market at a fair price for every eatable bean we have. You are entitled to a fair profit and it is your own fault if you do not get it. Take the pink bean market, for example, with a crop less than half of last year's; farmers are actually selling this variety for less than the cost of production. Can anything be more foolish? If you want to stimulate the trade, stop this slump; stand firm for a living price and you will get it."

WALNUT WORM THREATENS

Continued from Page 442

them in boiling water for ten minutes as soon as received.

Growers in infested territory whose own orchards are clean should dip all sacks in boiling water as soon as received back from the packing house.

All packing houses, cracking plants and other places where wormy nuts are handled should dip or fumigate all sacks before they leave the house. Directions for such fumigation will be given by the county horticultural commissioners of Santa Barbara and Orange Counties, who require all sacks to be treated in houses within their county handling wormy nuts. It should be remembered that no effective control can be maintained in cracking plants or warehouses located outside the infested districts. The California Walnut Growers' Association, however, is taking voluntary preventive measures in its Los Angeles plant.

This may prove to be the worst pest which has thus far appeared in walnuts and so growers and dealers alike should unite in an effort to stop its further spread, and already the California Walnut Growers' Association has appropriated a sufficient sum of money for experimental work leading to the further control of this pest.

THE FUMIGATING GANG

Written for California Cultivator
By Doris Packard

It's neither by light of the midnight moon,
Nor yet of the mid-day sun,
But under the gleam of a candle beam
The deadly work is done!

By night the man of the Kill-scale Klan,
With a candle perched in his cap,
Comes out with his tools of death for the fools
Who think they can live on sap.

The tents swish upward like silk gowned ghosts
On their way to the dance of death;
And the bugs that are wise all shut their eyes,
And each of them holds his breath.

The tent is down and the gas is on,
And the bugs turn up their toes!
For Hades fumes in the white walled rooms,
—And the lemon grins, and grows!

You who have lived upon lemon pie
With lemon pie meringue,
Oh, little you knew that your pie was due
To the Fumigating Gang!

A DANGEROUS PEST DISCOVERED

Attention of the state horticultural commission has been called by Dr. L. O. Howard to the establishment in California of an European snail, Helix pisana. This snail in Southern Europe occasions much damage to both field and orchard crops, even attacking citrus trees, particularly the buds and blossoms, as well as the leaves of loquats and olives, and of the edible cactus or fig of India. The known distribution of the pest is as follows: Italy, Austria, Dalmatia, Greece, Spain, Portugal, France, England, Dardanelles, Turkey, Madeira, Canaries and Azores, Morocco, Tunis, Algeria, Tripoli, Egypt, Cape Colony and Natal. It is now found in San Diego County and covers an area of only perhaps one half mile diameter.

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Economy—for Waste.
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Performance—for Argument.
Service—for Sneers.
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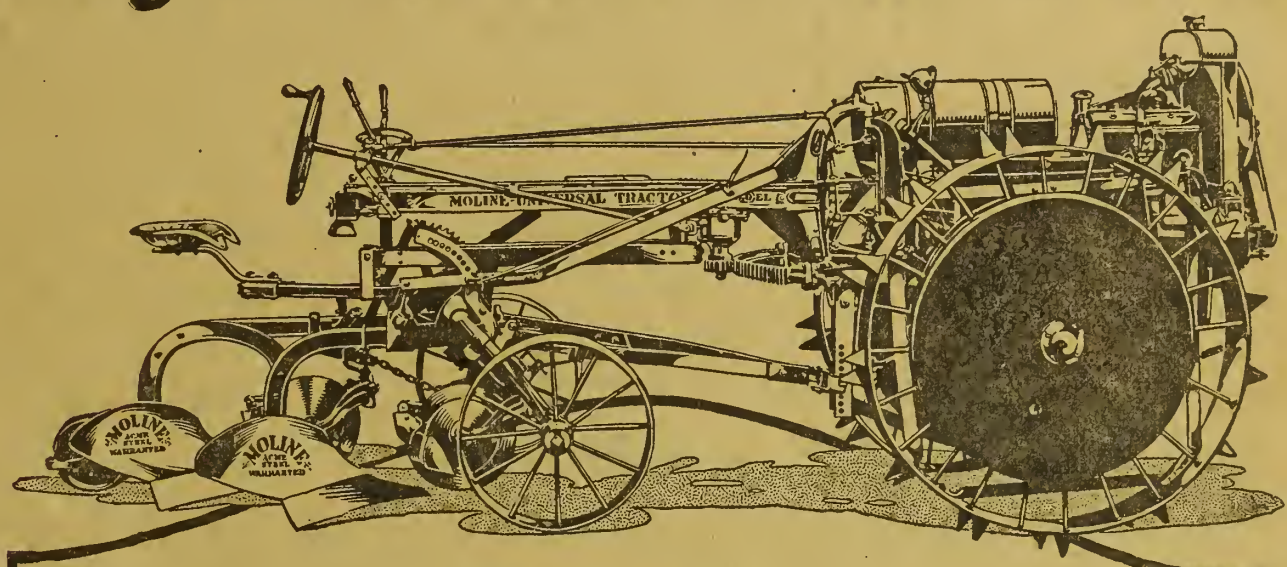

Because:

You may not be able to get a Moline-Universal if you delay ordering.

You will help relieve spring congestion of shipping by buying now.

You will have plenty of time to become familiar with its construction and operation before the spring rush and will be able to work your tractor in on belt work and other light jobs.

It is the only tractor which does all farm work including cultivating.

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You can practically double your efficiency ---you can produce more food with less help. You will need it, order now.

Write today for full information and name of your nearest Moline Dealer. Address Dept. 49.

Moline Plow Co., Moline, Illinois

MOLINE UNIVERSAL TRACTOR

This Month in the Vegetable Garden

Northern California

Written for California Cultivator By A. R. GOULD

SOIL preparation will still be in order and in fact will form much of the work for this month. The foundation of a good garden and increased crop yields is in the soil, and while nature is ready to do her part it is up to the gardener to do the rest. See that every section of the garden gets the same careful trenching and manuring and read over the notes on manures, etc., in this department for last month. Never use a fertilizer unless you understand its worth, its properties and its probable action.

Rhubarb

This crop is a very heavy feeder, delighting in a stiff loam and lots of farmyard manure. Dig the latter well in the rows, and this will also be a good time to dig and divide the crowns or clumps for replanting. In the preparation of these new plots use manure liberally, trenching it deeply. If new stock is required the following varieties are recommended and may be secured from your seedsman: Wagner's Giant Crimson Winter, Myatt's Victoria and Strawberry.

Asparagus

Special attention should also be given this crop and the bed should be forked lightly and dressed with manure.

Onions

As advised last month, the bed for this crop should have been carefully prepared and richly manured, and after sowing it should be pressed firm. Those who may not have found it possible to clear their ground and get this into shape last month should lose no time and get this work in hand at once. As soon as a favorable opportunity offers itself after a rain, seeds of the early varieties may be sown, such as Extra Early Pearl, red and white Bermuda and Crystal White Wax, a popular market variety. Soot, frequently applied after the seed has germinated, will prove beneficial to this crop.

Tomatoes

Any well formed fruits which are still green may be collected and placed in the house to ripen or they may be used for pickles and in many other ways in their green state. The frosts will soon play havoc with this crop and it will be advisable to save all available fruits. Collect all rotten and diseased fruits from the plot and bury these with quicklime. This precautionary measure will prevent the spores from spreading and wintering in the plot.

Peas

Unless there is a continuation of the rains early this month it will not be advisable to continue sowing this crop. Watch for the first favorable opportunity and as soon as there is enough moisture in the soil sow the following main crop varieties: Stratagem, Telephone, Senator, and Yorkshire Hero. Successional sowings of the early varieties may also be made. In addition to those named last month we can recommend British Wonder and Morse's Premium Gem.

Beans

Continue the use of the hoe between the lines of these.

Lettuce

In the absence of rain keeping this plot well supplied with water and constant cultivation will repay with well developed heads.

Strawberries

Young plants of these may still be put out and those previously planted should be kept well watered.

Storage of Surplus Crops

Many root crops will have matured, and as these plots are cleared the roots not required for immediate use should be stored away in a dry place between layers of sand or they may be dried and preserved in various ways. Pumpkins, squash and casabas should all be collected and stored in the cellar or in a dry shed for use later on. Beans should be cleaned and will help out the food supply. It is a crime these days to let anything go to waste. Help feed yourself and your allies.

Southern California

Written for California Cultivator By D. F. Reichard

THIS is as truly garden cleaning time as April is house cleaning time. Deciduous trees and shrubs and berries should be pruned and thinned out. The dead wood ought to be removed from citrus trees. Corn, squash and sweet potatoes should be harvested and stored or disposed of before deterioration starts.

All plants from which crops have been harvested if not infested with disease or pests may be put into the compost heap or turned under for fertilizer. All infested prunings or litter should be burned. The infested trees and shrubs if fumigated or sprayed at this time destroy the insects and fungi as they are growing into winter form. These precautions about cleaning up go a long way toward controlling pests and disease next spring.

Unless your corn was planted late it is dry enough to shell and sack. In this condition it can either be sold or stored. Squash and pumpkins should be brought in and put under shelter before they are frosted. If it is necessary to pile these be careful not to bruise or scratch them and see that all imperfect ones are thrown out for immediate use or sale according to their condition. One bad squash or pumpkin will soon infect a large portion of the pile. Sweet potatoes must be dug before frost to retain their flavor and keeping qualities. If only a small quantity are to be put away select clean, firm tubers, wrapping each one separately in one thickness of newspaper and pack in boxes or pack in dry sand in boxes so that the tubers do not touch each other. To store in large quantities stack in a convenient place, alternating layers of sand and potatoes, then covering the whole so as to keep the rain out. The important thing about keeping sweet potatoes is to keep them dry.

This is the month to begin planning what you are going to plant next year and where and when it will be planted. On all ground not now occupied with crops and around trees and shrubs liberal dressings of barnyard manure should be applied to be leached into the soil by the rains. When there has been enough moisture to wet down two or three feet the ground should be worked at least a foot deep. Be sure to get the manure well turned under.

During these cool months it is not advisable to plant any of the tender summer vegetables such as beans, tomatoes, squash and corn. The hardy vegetables require a month or two more to mature at this season of the year than in the late spring and summer.

For early spring and continuous use plant in soil prepared as suggested in last month's Cultivator on pages 337-338 the following: Egyptian beets, Half Long carrots, Purple Top and Snowball turnips, early and winter radishes, Wonderful lettuce, Amsterdam Giant spinach, kohl-rabi, onions, seeds and sets, salsify and Laxtonian or dwarf peas. Set out plants of cabbage, cauliflower, kale and Swiss chard, horseradish, asparagus and rhubarb.

When planting seeds sow in rows about 20 inches apart so as to allow for irrigating and cultivating. The plants should be set farther apart to allow for top growth.

It is time now to be thinking of the hot bed for tender stuff for early spring planting. It takes over two months to grow tomatoes, peppers and eggplant to a size for planting out.

ANARCHIST PARALYZED MILK

The Milkman (to suspicious customer): "You won't find nothing wrong with that milk, ma'am. All our milk is paralyzed by a government anarchist."—Passing Show.

Get Full Plow Value Behind Your Tractor

John Deere No. 5 and No. 6 Tractor Plows meet fully every requirement for better and longer service in this section. We recommend them to you on the basis of proved superiority in California fields, orchards and vineyards. We want you to investigate them. It won't take you long. It will pay you to do it. See these plows at your John Deere dealer's store. Drop us a post card and we will send you a folder describing them fully. We'll also be glad to send you our free book, *"Better Farm Implements and How to Use Them."*

Ask For Package PT 3 2.

John Deere Plow Co.
San Francisco, Cal.

JOHN DEERE
Tractor Plows

John Deere Advantages

Steady running—axles rigidly fastened to beams.

Land wheel set back, balancing weight of plow over all wheels—even depth of plowing in uneven ground. Plowing position reached quickly. Bottoms locked down—*stay in the ground* while plowing.

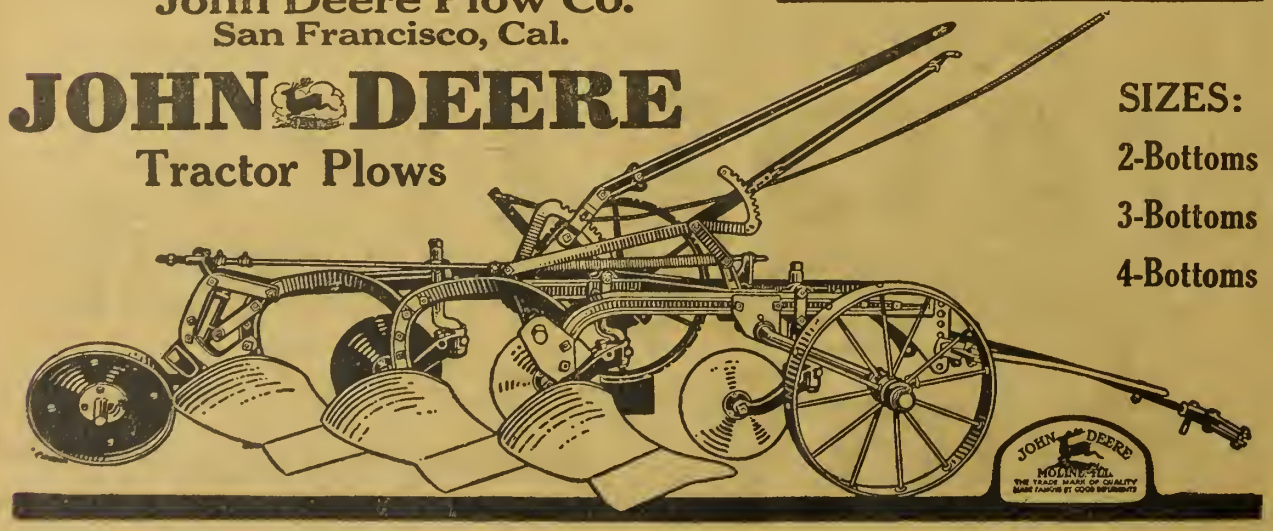
Exceptionally strong throughout. Highest grade material. Beams warranted not to bend or break. Beam braces have extra long lap. Large bolts and lock washers hold all parts rigidly to place.

Simplest and most dependable power lift—no chain or sprockets. Bottoms raised high and level on half turn of land wheel.

Location of land and front furrow wheels permits work close to trees or vines throwing either to or from the row. Lever can be lowered out of way of limbs.

Quick Detachable Shares, strong and close fitting. Loosen one nut to remove share. Tighten same nut and share is on tight.

Hitch adjustable for any standard tractor.



SIZES:
2-Bottoms
3-Bottoms
4-Bottoms

This Month in the Ornamental Garden

Southern California

Written for California Cultivator

THIS is bulb planting month. Iris which have been in the ground two years or more should be taken up and divided. Daffodils and jonquils which bloomed in the spring and were placed in the basement over summer should be planted out. Besides, put in plenty of ornithogalum, anemones, ranunculus, sparaxis, narcissus, hyacinths, ixias, lilies, etc. It will soon be time to take out of the ground tubers of the dahlias which flowered this season as never before.

There is a big bunch of annuals which are in order almost every month in the year. In any case, the present month affords a good time for the planting of snapdragons, clarkias, candytuft, poppies, stocks, larkspur, calendula, marigold, etc. Especially, plant liberally of California poppies.

It is a bit late, however, sweet peas planted early in the month will give good results.

Practically all evergreen shrubs and trees may be successfully planted this month. Especially plant rhododendrons, magnolia, laurels, pittosporums.

Lawns which have become filled with Bermuda may be given a good raking and fertilizing, which will encourage the blue grass and prevent the browning which usually comes with the first frost on Bermuda.

Midwinter bloom of roses may be secured by very severe pruning at this period.

Northern California

Written for California Cultivator By A. R. Gould

IT IS surprising how much more forward we are by planting in the fall than if we left it all until the early spring. During this month and next we can carefully divide our perennial clumps of Michaelmas daisies, Heleniums, Shasta daisy, etc., and replanting can be carried out. It will be advisable to prepare the ground by trenching deeply and applying manure liberally. Get your orders in to nurseryman without delay for new plants and shrubs or ornamental shade trees. Quite a few of the most reliable firms who advertise in the Cultivator will be able to supply you with almost anything you desire, and do not forget that amongst the native shrubs of this state are some you should plant in quantity. A case in point is the Ceanothus, of which there are quite a few beautiful species, and many more we could mention will no doubt harmonize with your surroundings.

In our desire for new and rare imported plants we are apt to overlook our native stock and lose sight of their possibilities. For a charming range of blue shades which are in flower for quite a long time the Ceanothus are ideal. They are commonly known as the Mountain Lilas. Before planting any new shade trees dig the holes deeply and fill up with rich soil and manure. After planting the trees press the soil around the roots firmly and make the tree secure with a strong stake. If the lawn was renovated last month see that it does not suffer for lack of water. As the annuals go out of flower remove them and dig up the beds.

Violets

Plant new beds of these and manure existing beds heavily. They will also need plenty of water.

Rhododendrons and Azaleas

Extended plantings may be made of these in shady positions and those planted previously should have a dressing of decayed leaves and manure well dug into the soil around the roots. It is also important to remember that these beautiful shrubs enjoy plenty of moisture. Among the best named varieties for a choice collection are the following: Abraham Lincoln, rose crimson, Cunningham's White; Lady Armstrong, pale rose; Charles S. Sargent, rich crimson; and Giganteum, large, cherry red.

Climbing Roses

For a good fence rose, Silver Moon, semi-double white, having dark green foliage, is very suitable in every respect. It is a most vigorous grower. Before planting prepare well manured trenches. Other good climbers are American Pillar, dark pink; Aviator Bleriot, flowers in yellow clusters; Dr. Van Fleet, flesh pink; and Cherokee, pink, large flowers.

Dahlias

The tubers of these should be dug this month, carefuly labeled and stored away in a dry cellar or shed for another season. Seed of the best varieties may be collected and cleaned for sowing in a month or two.

Sweet Peas

In deeply manured trenches the following varieties may be sown: Early Snowflake, Early Heather Bell and Early Song Bird. These will give you very early bloom. To follow on sow Dobbies' Cream, Royal Purple, R. F. Felton, Illuminator and George Herbert. These will provide a succession of bloom. It is best to soak these seeds a few hours before sowing.

Polyantha Primulas

These beautiful primulas are getting deservedly popular, especially the large flowered strains, and they are among the earliest of our spring flowers. They thrive in fairly rich soil and clumps of these may now be divided and replanted.

Seed Sowing

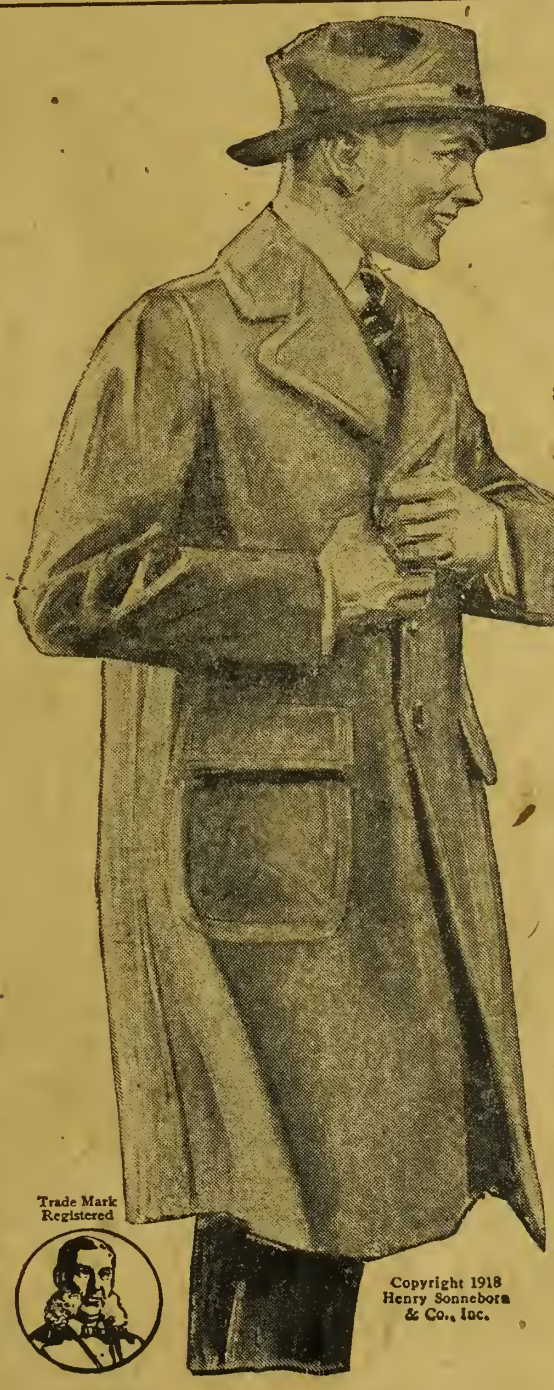
The following subjects may be

2½ more tons to the acre!

Plant Hairy Peruvian Alfalfa!

Germain Seed & Plant Co.
N. E. Corner Sixth & Main Sts.
Opp. P. E. Depot
Los Angeles, Cal
Established 1871

When writing advertisers, mention The Cultivator.



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Because they are stylish in appearance—designed and tailored by experts.

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Because they are moderate in price—enable you to dress well and practice thrift.

Styleplus are manufactured on the standardized plan—a few grades in big volume, with costs reduced and clothing values increased.

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There is a big advantage in buying clothes at a store. You can *see* the different styles, try them on, and make the best selection. You can be certain of the fit *before* you order the clothes.

So make your pick today at the Styleplus Store in your neighborhood.

Two grades in Styleplus suits: $25 and $30.

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Sold by one leading clothing merchant in most cities and towns. Write us (Dept. AB) for Styleplus booklet and name of local dealer.

HENRY SONNEBORN & CO., INC. Founded 1849 Baltimore, Md.

Styleplus Clothes
$25-$30-$35
TRADE MARK REGISTERED
Each grade one price the nation over

America's only known-priced clothes

Wyoming Herefords

Largest Herd in World **Strongly Anxiety-Bred**

Miss Rialto 2nd, junior yearling heifer, grand champion at Wyoming and Utah State Fairs.

These Great Bulls in Service

WYOMING FAIRFAX.
NEW ERA.
RIALTO
ROEHAMPTON 2ND.
GOLD DUST.
BONNIE LAD 25TH.
BEAU STURGIS 4TH.
BONNIE LAD JR.

OUR HERD OF COWS were bred and grown on our 25,000 acre ranch. They descend from a choice lot of imported cows with which have been used only the best Anxiety-bred bulls. Our Herefords possess substance, size and quality. If you need bulls with these qualities we can furnish them in carload lots. See our exhibit at the California shows. Liberty Fair, Los Angeles; California International Live Stock Show, San Francisco.

Hereford Corporation of Wyoming

Cheyenne, Wyo.

Raymond S Husted, V. P. and Gen. Mgr., Exchange Bldg, Denver, Colo.
William Cox, Herdsman

A DUROC OPPORTUNITY

H. P. Slocum & Son

Must Sell

150 Head of Modern Durocs

The junior member of the firm has been placed in Class One-A and is expected to be called any time. Because of his age, the senior member can not undertake to carry on the herd, and for that reason it has been decided to close out the entire herd.

The Best Blood of the Breed

It is generally admitted that no herd in the West is superior in point of breeding or individuality. We have the blood of High Orion; Great Wonder; Giant Invincible; King Orion Cherry and King of Orions. There is no better breeding. We selected our foundation stock for size, prolificacy, quality and bone. Our herd produced more champions and prize winners at the 1918 California and Oregon state fairs than any other herd.

Read What We Offer

Three herd boars, including Uneeda Wonder, that Eastern breeders would price from $1500 to $3000 each. Herd sows that we have refused to price. Young gilts and boars sired by some of the greatest boars of the breed.

Everything Must Be Sold

Absolutely nothing reserved and everything is priced to move.

Write at once for prices.

H. P. Slocum & Son

Willows, Calif.

sown: Hollyhocks, aquilegia, campanulas, helenium, alyssum, sweet William and gaillardia.

Hedges

These should now be trimmed neatly with the garden shears and this month and next will be a good month to prepare for planting new hedges.

PLAN GAS ATTACK ON WEEVILS

Bean and pea weevils, which annually destroy millions of dollars' worth of valuable food and feed in the form of beans, peas and cowpeas in storage, have not yet discovered the advantages of gas masks. Those who expect trouble from weevils can successfully kill them by a gas attack immediately after the crops are harvested. Carbon disulphide should be used. Place the seed in an air-tight container, such as a tin can, barrel or bin, and over the top pour a small amount of the chemical (two to four pounds to every 500 cubic feet of space to be fumigated), cover the seed with burlap or old blankets and fumigate from 24 to 48 hours. The seed should be inspected frequently to see that the weevils do not reappear. In case they do, repeat the gas treatment.

Swine Breeders Constructive Plans

Written for California Cultivator By Frank B. Anderson

WITH the assertion that at times the swine grower feels that the hog business "is not what it is cracked up to be," the California Swine Breeders' Association has set about to better the pork industry in California insofar as the aid of a big strong organization consisting of producers can make it. County units are being formed and steps taken to get market conditions which will be the most certain means of increasing pork production in this state. Many steps can he taken to increase production, but nothing will stimulate the pig growing business like a better market, so this feature of the aims and purposes of the association is being held paramount to all others.

In order to make the association strong enough to be of real help to the growers, President C. B. Cunningham has mapped out a plan of organization which will give the various directors several contiguous counties to supervise in the work of establishing county units. These directors hail from all sections of the state and represent the various breeds of swine, so that no breed nor section will be overlooked. This is not a movement for the advancement of any breed or breeder, but to encourage the raising of more and better hogs in California.

While it is taking a little time to develop the organization to such an extent as it will be able to work up the better marketing end of the business, no time is being lost in preparing a measure to submit to the next legislature asking that a pure-feed law be enacted for the California growers of swine, dairy and beef cattle, sheep and poultry. Secretary J. I. Thompson of the swine organization has received copies of similar laws from other states and an early conference will be held with the various organizations representing all the users of commercial feed stuffs, and one bill embodying all features applicable to California conditions will be submitted.

The urgent need for such a law has been demonstrated during the past year since the price of many of the ordinary feeds went skyward and the feeder was obliged to use some commercial feed which sounded well in name but which did not work out quite so good in the feed-lot. In the absence of proper legislation on this subject, the feeder was forced to take what was offered or go without. Some feeders of live stock and poultry were forced out of business.

Hog growers have been attracted by the success of various agricultural producers in organizing, and as much is expected of the swine association. In surrounding himself with a board of directors representing various breeds and localities of the state, President C. B. Cunningham, who is also a member of the live stock commission of the federal food administration, told the hog growers that he did not want the sort of directors who enjoyed the honor of being a director, but whose services ended there. Cunningham has a "working board" with him now and says he will do his utmost to advance the interests of the hog men through this association.

The officers include the following: President, C. B. Cunningham, Mills; vice president, Alex D. McCarty, San Francisco; secretary-treasurer, J. I. Thompson, Davis; directors—M. Bassett, Hanford; W. S. Guilford, Butte City; H. H. Braly, Newbury Park; Elmer Lamb, Ceres; R. K. Walker, Bonita, and Frank B. Anderson, Sacramento.

All persons interested in the hog business are invited to join the association.

AIMS AND PURPOSES OF THE CALIFORNIA SWINE BREEDERS' ASSOCIATION

To stahilize market conditions in order that the producer may he assured a reasonable profit.

To secure the enactment of a pure feed law, so that the buyer will know what he is getting when he buys commercial feeds.

To collect data on the condition of the hog industry, with recommendations wherein it can be improved, and distribute this to hog raisers.

To encourage the use of pure-bred sires.

To assist in increasing the export trade in hogs to the islands of the Pacific and South America.

To cooperate with the federal food administration in such ways and at such times as will be to the greatest benefit to the nation and to our allies.

To assist in every way possible toward the more profitable production of more and better hogs, and give the hog growers an organization which will he in a position to accomplish improved conditions which the growers desire, but wherein they are helpless through lack of organization.

Field Notes from the Live Stock Men

$38,700 for a Shorthorn Bull

William Harnett advises the Breeders' Gazette that the grand champion Shorthorn bull of the recent Buenos Aires show sold for $90,000, Argentine money—about $38,700 in our money.

Horse Values Lower

British buyers on the Chicago market state that they are able to buy better horses at less money than at any time since the war began. Lack of competition from civilian sources for the type that fills transport specifications is the reason for the existing condition.

English Berkshires for California

Berkshire breeders will be interested to know that E. B. McFarland, San Mateo, is making his plans to again enter the Berkshire business. Mr. McFarland has announced that he recently closed a deal with the Gossard Breeding Estate, Martinsville, Indiana, for eight gilts sired by the English champion, Lord of England,

and a boar by the much discussed English boar, Epochal.

California Berkshires are acknowledged to represent the best of the breed, and breeders will be keen to see how these English hogs "stack up" with the California product.

The question of introducing English blood into American herds is causing much discussion in breed circles. It is claimed by some that this new blood will raise the prolificacy of the breed, increase the size, and generally rehabilitate the Berkshire on the corn belt farms.

Sandercock Buys Baron Duke 201st

W. F. Sandercock, San Francisco, who has established an exceptionally high class herd of Berkshires on his Natomario Farm, near Sacramento, has recently purchased Baron Duke 201st, grand champion boar at the 1917 National Swine Show. Baron Duke 201st was formerly at the head of the Frank A. Brush herd.

Cochel Visiting California Cattlemen

W. A. Cochel, field representative of the American Shorthorn Association, who is to judge Shorthorns at the forthcoming Liberty Fair at Los Angeles, is now in California and is taking advantage of the postponment of the show, to investigate the cattle situation in this state.

Mr. Cochel is considered one of the keenest students of the live stock industry in this country and during the past year he has taken a commanding part in solving many of the big problems that have developed as a result of the war.

It is Mr. Cochel's opinion that for a good many years after the war the demand for meat and meat products will continue and he expressed the belief that there never was a more inviting time to enter the business of meat production than at the present time.

The South, according to Mr. Cochel, is making very rapid progress in live stock development, although all sections are showing a quickening interest.

Whittier Holstein and Berkshire Sales

N. B. Balis, superintendent of live stock at the Whittier State School, writes that the recent sales made by that institution include a December Holstein bull calf to Dante Paggi, San Gabriel, and a calf of the same age to Sargent Bros., Whittier. Both calves were sired by the Whittier herd bull King Segis De Kol Mead. The Paggi calf is out of a dam with a 16.26 pound junior two year old record, and the Sargent calf is out of Whittier Ormsby Hartog, who has a junior three year old record of 24.13 pounds.

Mr. Balis also reports the sale of a Berkshire gilt by Ames Rival 117th to W. W. Martindale, Los Angeles, and a boar and gilt to W. J. Gretten, Gardena.

Feeding Sunflower Silage

McAlister & Sons, Chino have a small quantity of sunflower silage that they are giving a trial. J. W. McAlister, Jr., states that the cattle seem to relish it, but that they have only a small amount and probably will not be able to draw definite conclusions as to its feeding value.

The Montana station has carried on a number of investigations comparing Russian sunflower and corn silage, and trials where an average of over 70 pounds of each silage was consumed daily per head, show that sunflower silage, pound for pound, was about the equal of corn silage for dairy cows.

Two New Holstein Class Leaders

The Holstein-Friesian Association of America announces that the senior three-year-old record is now held by Jewel Pontiac Segis, and the senior two-year old record by her half sister, Beauty Beets Walker Segis.

Jewel Pontiac Segis is credited with a yearly production of 27,068.5 pounds milk and 1171.15 pounds butter. The former holder of this class record was Duchess Hengerveld Korndyke, whose record was 22,897 pounds milk and 1129.22 pounds butter.

Beauty Beets Walker Segis has a yearly record of 25,343.3 pounds milk and 1040.63 pounds butter, which places her ahead of K. P. Manor Kate, whose record is 22,106.4 pounds milk and 1023.4 pounds butter. The two

Continued on Page 454

Turn This to Your Profit

Think carefully how many of the splendidly bred, heavy producing cows that will be sold by A. W. Morris & Sons Corporation you are able to buy and equipped to feed and handle. There is a fortune to be made through the purchase of some of these cows, bred to the Morris herd sires, and they will be sold absolutely without reserve or limit to the highest bidder—

90 Registered Holstein Cows

Three of them with records from 30 to over 33 pounds butter in seven days; 30 of them with records from 20 to over 29 pounds butter in seven days; 30 of them with yearly records up to over 24,000 pounds milk and over 1000 pounds butter.

75 or more of them bred to six bulls, every one of which has sired a world's record daughter or has for a dam a cow that has made one or more world's records.

Consider then what a wonderful lot of calves these cows will drop, full sisters and brothers to the young cows and heifers that the Morris Corporation will retain in their breeding herd, for remember that

The Morris Herd Contains 450 Registered Holsteins

and the sale of 105 head in this sale will leave them quite a sizable herd to work with. And remember also that the females in their herd after this sale will be very largely composed of DAUGHTERS OF THE SIRES TO WHICH THE COWS IN THIS SALE ARE BRED, and you will get the full benefit of their work if you are fortunate enough to buy in this sale.

15 Registered Holstein Bulls

In this sale will be offered several choice young bulls that should go to head pure bred herds, and besides an especial effort has been made to offer some richly bred young bulls that owners of grade dairy herds can buy and own at a profit. Owners of grade herds should plan to attend this sale by all means, for it will be a rare opportunity to buy sons of the great Morris herd sires at the highest bid.

DON'T FORGET that there are 25 FRESH COWS in this sale, big producers, and we believe they will sell at moderate prices.

Every Animal in this Sale is Positively Guaranteed to be a Breeder

No Animal in this Sale is Tuberculin Tested

Sale will be held on the Morris farm, 4½ miles Northeast of

Woodland, California
Tuesday, November 12, 1918

Catalog in preparation. Write for one.

Management

California Breeders Sales and Pedigree Company

J. M. Henderson, Jr., President — C. L. Hughes, Sales Manager

Sacramento, California.

Auctioneers—Col. Ben A. Rhoades; Col. Cy N. Clark.

Prince Hiske Walker

He is by Prince Gelsche Walker and out of Hiske of Riverside, being therefore full brother to Lady Hiske Walker, 34.25 pounds butter in seven days as a junior four year old, former state record in class.

His offspring are uniformly straight, vigorous, and well marked. A few of his young sons for sale.

Packwood Farm

W. F. Mitchell, Owner *Visalia, Cal.*

Sir Aaggie De Kol Acme 2nd

Five of his seven nearest dams average:
Milk one year....24,089.88 pounds
Butter ..... 1,105.07 pounds

This butter average is equalled by only one other bull of service age in the world. Buy your next bull from

Eldorado Herd

Alex. Whaley, Owner — Tulare, Cal.

Creamcup Holsteins Headed by the 33.92 pound bull Creamcup Champion Pontiac Burke. A few young bulls for sale. M. M. HOLDRIDGE, Rt. A, Box 437, San Jose, Cal.

HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

Registered Berkshire Pigs

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee.

Careful attention given to mail orders

Whittier State School

Whittier, California

AYRSHIRES

REGISTERED

Herd Sire, Dairy King of Arizona

CHOICE BREEDING STOCK FOR SALE

A. MACMINN

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California Cultivator

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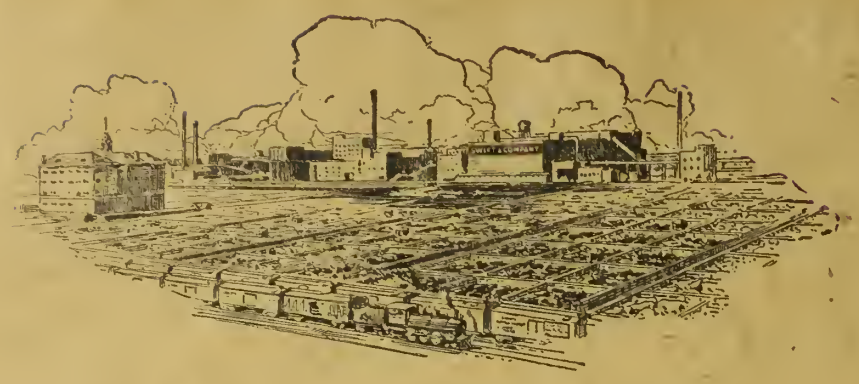

How the packers have helped to develop good stockyards

—and how this has benefited you as a producer

WHOSE job is it to provide and maintain stockyards, or markets, for the open buying and selling of cattle?

Who shall see that these markets have good pens where your stock can be properly watered, fed and taken care of until sold?

Stockyards, in early days, were not efficiently managed, and were not financially attractive to investors, except in the largest markets.

As the packers built their big-capacity plants at the various live-stock centers, they naturally became interested in helping to develop adequate stockyards facilities, where stock raisers could ship their animals.

The present high efficiency of most of the principal stockyards is due largely to the time, the effort, and the money the packers have put into them.

All stockyards, including those in which packers are interested, are conducted as *public* market places for the benefit of all.

They are open to all—to producer, commission man, dealer, speculator, the packer's buyer—and with exactly the same rights to each.

Packer-ownership gives no special advantages to the packer and no control over live-stock prices.

These spot-cash markets have been a factor of very great importance in promoting the growth of the live-stock industry.

If stockyards efficiency can be increased by Government ownership and operation, all well and good. Swift & Company is content to stand on its record of having helped the live-stock industry by the part it has played in developing these market places.

Swift & Company, U. S. A.

A nation-wide organization owned by more than 22,000 stockholders

HOW GOOD BLOOD PAYS

The article by Mr. Spellmeyer, in this issue brings out a number of points to which the cattle interests of this state must sooner or later give heed.

The point he raised regarding the possibility of increasing the carrying capacity of the range through better systems of range management, and particularly the use of more and better bulls, was strikingly demonstrated at the recent field meeting of Missouri, Kansas, Oklahoma and Arkansas cattlemen at Sni-A-Bar Farm, near Grain Valley, Missouri.

A few years ago Col. W. R. Nelson, owner of the Kansas City Star, began purchasing land near the little town of Grain Valley, just outside of Kansas City. From time to time more land was added to the initial purchase until the "farm" contained 1750 acres. During the development of the farm Colonel Nelson proceeded on a different plan than is usually followed by rich men who turn to the land. He did not build a show place but developed the farm along the most practical lines—just as any practical farmer would.

Colonel Nelson believed in live stock farming. He had watched the live stock of the Southwest change Kansas City from a little river town to one of the finest cities. He knew that those communities of Missouri and Kansas where one found the best farms were live stock sections. It was natural then, that he would give live stock leading place in his operations.

About five years ago he went onto the open market at the stock yards and purchased 100 cows, and some time later bought 200 head more. The cows selected were good, straight, thick red cows, with good udders and showing evidence of fairly good breeding. Starting with these cows, the next move was to buy bulls, and the best white Shorthorn bulls that could be found were purchased. The prices paid would, perhaps, seem high to the average man, but the results of such a policy have demonstrated the wisdom of using only the best bulls available.

From the first, the cattle were handled along the most practical and progressive lines. No expensive barns were provided, only such buildings as can be found on any number of corn belt farms were built. The breeding herd was carried through on blue grass pasture, with hay and silage in the winter. The steer calves were fed out as baby beef. The heifer calves from the better cows were saved for the breeding herd.

It was for the purpose of showing the results obtained under such conditions that the cattlemen were invited to attend the field day.

The cattle were lotted by ages and crosses. In one lot were cows from the original purchase, and in the adjoining lot were their sucking calves. The first crop of daughters were in a lot and next to them were their calves. It was stated that not a word of explanation or argument was needed to make the demonstration plain to the 2000 visitors. The young cows from the first cross were superior to their dams, and in turn their daughters showed marked improvement.

Perhaps the most striking feature of the demonstration was the showing of first and second cross steers. The same number from each cross were selected, all were the same age, about thirteen months, and all had been handled and fed in exactly the same manner. The steers were weighed and were valued by commission men. The first cross lot averaged 850 pounds, and were valued at $14 per cwt.; the steers from the second cross averaged 978 pounds and carried a value of $17.00 per cwt. In other words, the second cross calves, at the same age, and fed and handled in the same way, brought $47.26 more per head than the first cross calves.

That such a demonstration made a profound impression on the visiting cattlemen goes without saying, yet the story told was not new, and need not necessarily apply to beef cattle alone but is applicable to every class of live stock.

The possibility of increasing and cheapening the production of meat, milk and wool, through the use of better sires opens up a very wide field. The man who refuses to see the value of better blood is standing in his own light.

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50 Berkshire Suckling Pigs eligible to registry, sired by Iowana Rival Majestic 194736, son of Rival's Champion 112500, and sons of Iowana Rival Majestic, at $12.50 weaned.
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INCREASING THE CARRYING CAPACITY OF THE RANGE

Written for California Cultivator
By A. L. Spellmeyer

From the results obtained at my Apache Ranch, in Arizona, during the past four years, I have become convinced that improved methods of range management can be made to double the production of beef in the Southwest. The factors I would name as making for increased production are: Fencing, division of summer and winter grazing, development of water, more and better bulls, segregation of bulls, corral salting, long terms on cattle-loans, security of permits and destruction of coyotes. I also believe in government control "from the calf to the table." All these factors I believe would tend to make the industry safe instead of a risky gamble, and at the same time would give the consumer cheaper meat.

In September, 1914, we bought a ranch with an 1800 head permit, and, according to the seller, about 800 calves were branded a year. By fencing, close control and adopting improved methods, this outfit paid all expenses and interest at 8 per cent and paid out in June, 1918. Furthermore, it paid for improvements to nearly the amount of the original purchase price.

This year this outfit should brand nearly 2000 calves. It now carries a permanent permit for 2800 head and is paying on a 1500 excess.

During a dry year, because of water development, grass has been good and our loss has been cut to three per cent or less.

Adjoining outfits, operated under different methods, have lost cattle and are in a rather bad way. It seems to me that this fact, in itself, is sufficient proof that more cattle can be run under a controlled and rested grazing system.

About 2,000,000 head of feeding stock from the southwest have been forced on the market during the past year. When one bears in mind that the southwest is the breeding ground of the nation, furnishing yearling steers to the middle west and northwest, it must be clear that a shortage of killing steers must be reckoned with later. According to Zimmerman and others who have loked into the cattle situation, the shortage will be very apparent within two years.

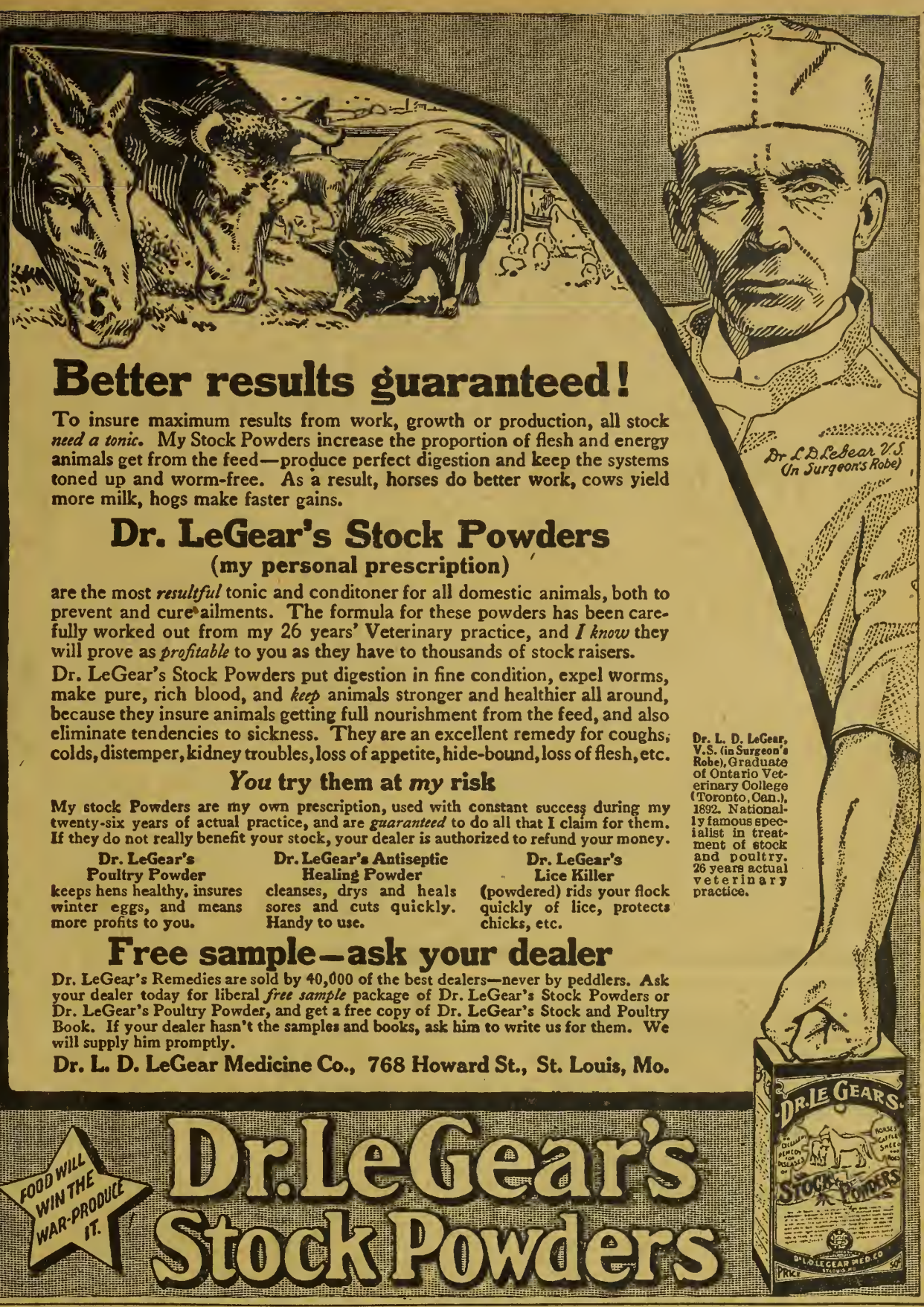
LET THE HOG FEED HIMSELF

With farm help scarce, the efficient farmer will endeavor to remove hog feeding from his list of chores. The hog can feed himself as well as, if not better than, the most expert feeder can do it if given the chance. The chance is offered by the self-feeder, a device by which the hog can choose from a variety the feeds best suited to his needs. Hogs require a variety of feeds to take care of their bodily wants. Also, one hog requires more of a certain feed than does another.

It is certain that the self feeder method of feeding is more efficient than the hand method and that it will save a great deal of time and labor. Instead of feeding two or three times a day, all that is needed is to see that the feeders are not empty and that the hogs have plenty of water.

There are several types of self feeders for hogs, but they all employ the same principle of letting the hog do the work. Some of them consist of just one compartment and are nothing more than a box with one side slightly altered. Others have several compartments with means of adjusting and regulating the opening to accommodate different kinds of feed and regulate the flow. The kind and size that a farmer will want depend on the size of his herd and his inclination in the matter.

Blue prints and directions for building different types of self feeders may be secured free by writing the Farm Engineering Department, University Farm, Davis, California. The United States department of agriculture farmers' bulletin No. 906, "The Self Feeder for Hogs," can also be obtained free by writing the Division of Publications, U. S. D. A., Washington, D. C.



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are the most *resultful* tonic and conditoner for all domestic animals, both to prevent and cure ailments. The formula for these powders has been carefully worked out from my 26 years' Veterinary practice, and *I know* they will prove as *profitable* to you as they have to thousands of stock raisers.

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The offering will include about twenty-five choicely bred two and three year old heifers from Colorado, which will furnish an opportunity for our California breeders to increase their herds with some choice strains. There will also be offered three or four bulls of herd heading quality.

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PURE BRED REGIST'D HOLSTEINS

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Production Butter Fat Everything Guaranteed

Prince Gelsche Walker Korndyke

(shown above)

is proving himself a breeding bull of the highest excellence. Particularly noteworthy is the uniformity of his daughters, straight backed, deep bodied heifers with splendid udder capacity and development. One of his two year old daughters sold for $1000 in Southern California a short time ago and goes as a foundation female in a high class herd now being established.

King Korndyke Pontiac

(shown below)

is proving himself a fit partner for Prince Gelsche Walker Korndyke, and is siring the kind of heifers we want to keep for breeding animals, and we have set our mark of quality high.

DAIRYMEN: We can suit you with a young bull from either of these great sires, out of dams with records up to over 32 pounds butter in seven days, and they are priced moderately, with terms to suit your circumstances if you wish.

JANE GARDEN FARM

SACRAMENTO — CALIF.

FRED W. KIESEL, PROP'R. C. W. YOUNG, SUP'T.

Individuality Breeding

We Have Been Telling You

that PRINCE RIVERSIDE WALKER is siring a mighty fine lot of calves in our herd, and prospective buyers who have come to look at his young sons have agreed with us for we have sold right down to calves all the time.

Now we have some expert opinion on the young sons and daughters of "Prince," in the form of awards at the recent California State Fair in the hot competition of the younger classes. Sons and daughters of PRINCE RIVERSIDE WALKER were placed as follows by Judge Scribner:

First Junior Bull Calf.
Fifth Junior Bull Calf.
Reserve Junior Champion Bull.
Second Senior Heifer Calf.
Fifth Senior Heifer Calf.
Reserve Junior Champion Heifer.
First Prize Breeders Young Herd contained some of his daughters.
Second Prize Calf Herd.
First Prize Produce of Dam, won by his twin sons.

Hadn't you better consider one of his young sons to head your herd, securing a rare combination of breeding and type?

Our Entire Herd is Tuberculin Tested

P. S.—Our junior herd sire, King Korndyke Pontiac 20th, was a second in class at the State Fair to the bull that was again made grand champion.

Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

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REGISTERED HOLSTEINS

A herd of fine individuals, strongly bred in the lines of great production as evidenced by both short and long time records, handled in a manner to produce sound, healthy breeding stock.

Prince Walker Cornucopia

Our junior herd sire, is sired by PRINCE GELSCHE WALKER, and out of a 34.14 pound granddaughter of the first 30 pound cow, Sadie Vale Concordia. He is the highest record son of Prince Gelsche Walker in service. We have for sale a few choice young bulls.

SANTA ANITA RANCHO *Santa Anita, Cal.*

Anita M. Baldwin, Owner *W. H. Taylor Supt.*

FIELD NOTES

Continued from Page 451

cows are owned by J. M. Hackney of Arden Farms, St. Paul, Minnesota, and are daughters of King Segis Pontiac Count.

Modesto Holsteins Average $210

In the second Modesto consignment sale held at Modesto, October 17, 50 head of bulls and cows were cashed for $10,520, an average of $210. In view of the general quality of the offering the prices obtained were considered extremely conservative.

No extreme high prices were registered, but the entire offering sold very uniformly. The tried bull, Sir Chimacum Wayne Woodcrest, goes to the R. L. Holmes herd at $685. Potoki Johanna 2d, an eight-year-old cow, with a seven day record of 27.86 pounds, consigned by J. M. Campbell, Escalon, topped the female division at $675. She was purchased by the Lewis Company, San Jose.

Meeting of Cattlemen's Association

Secretary D. J. Stollery reports that at the meeting of the California Cattlemen's Association held at the Palace Hotel, San Francisco, October 12, the amended articles of incorporation and revised by-laws and constitution were ratified.

This association, under the leadership of the president, L. A. Nares, who is also a member of the federal live stock commission, is working out a plan of organization that will have a far reaching influence on the cattle industry of the state.

Secretary Stollery announced that to date the association had secured a membership of 557, representing 297,350 head of cattle.

New Marketing Association

Members of the farm bureaus of Fresno, Tulare, Kings, Kern and Madera Counties have formed a central organization to be known as the California Farm Bureau Marketing Association, with headquarters at Visalia.

This association is the outgrowth of the auction plan of selling hogs, first inaugurated in Kern County by Farm Adviser Kreutzer.

This selling plan has proven so successful that nearly every county having a farm adviser has adopted the plan.

The new association plans to handle live stock and other farm products on an extensive scale.

Cattle Inspection Beginning November 15

Beginning November 15 the new state cattle inspection regulations will be put into operation in Southern California.

Under these regulations shippers of cattle will be required to have their cattle inspected by regularly appointed inspectors before shipping by rail.

University Using Hammond's Boar

Professor J. I. Thompson of the University Farm, Davis, writes that he is now using the Berkshire boar, Hedgemere Star, owned by Dr. H. J. Hammond of Sacramento.

Hedgemere Star, a son of Grand Leader 2nd, was first prize junior pig at the 1918 state fair, and attracted considerable comment because of his exceptional size. Professor Thompson plans to use the boar on daughters of Star Leader.

O'Connor Buys National Champion

J. Francis O'Connor, proprietor of the Castleview herd of Berkshires, Santa Rosa, has purchased the sow Rookwood Lady 100th, from the Frank A. Brush herd. It will be recalled that Rookwood Lady 100th brought fame to California Berkshires last year by winning the championship at the National Swine Show.

Farmers Protest Corn and Pork Prices

At a mass meeting of representative farmers of Nebraska, held at Lincoln October 16, resolutions were adopted protesting against the recent announcement by the food administration that in arriving at the cost of corn for the purpose of figuring the cost of pork production, that the "farm value" of corn would be used instead of the Chicago price.

The resolutions also stated that Nebraska farmers were receiving $16.00 per cwt. for their hogs, and that this represented a 9 to 1 ratio instead of the promised 13 to 1.

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HALLMARK HANE SHIRTS

Your Dealer is Displaying Them

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Newest models now being shown in practically every city and town in the U.S.A.

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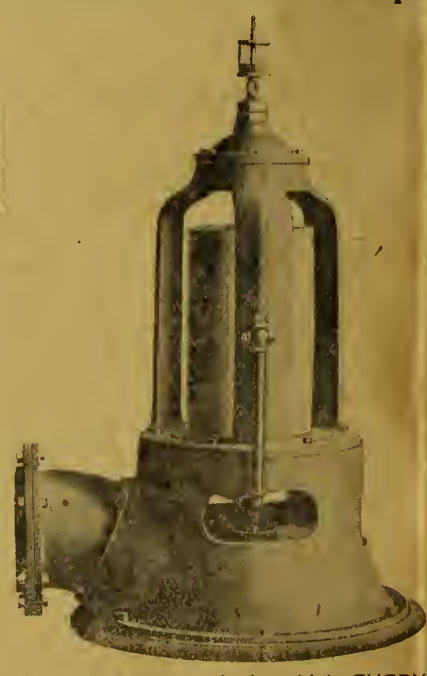

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In these days of high prices for dairy products, the "poor milker" is more than ever a liability.

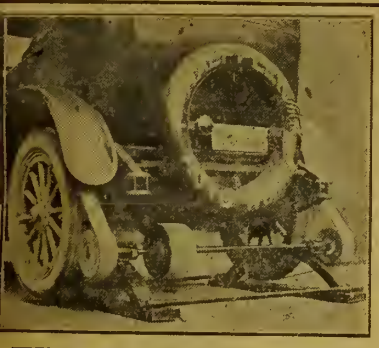
But before you sell the cow that is not producing well, try to improve her condition. Her milk value is much greater than her meat value.

Most poor milkers are non-productive because of some defect of health, which can be quickly remedied by intelligent treatment.

Kow-Kure is a medicine that acts quickly on the organs of digestion and milk production. Its widely known tonic and curative qualities have made it the standard cow medicine for the prevention of disease and the treatment of Abortion, Barrenness, Retained Afterbirth, Scouring, Lost Appetite and Bunches.

Give Kow-Kure a trial; it will do for you what it is doing for thousands of others. Feed dealers and druggists sell Kow-Kure; 60c and $1.20 packages. Send for free treatise, "The Home Cow Doctor."

DAIRY ASSOCIATION CO.
Lyndonville, Vt.



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OUR PIPE AND CASINGS ARE ALMOST AS GOOD AS NEW with new threads and couplings on each joint.
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orrespondence with the advertisers in the Californ-Cultivator will convince you that their articles save you money.

SLOCUM'S HERD OF DUROCS TO BE DISPERSED

The Duroc-Jersey interests of the state will regret to know, that owing to the fact that Clayton Slocum, junior member of H. P. Slocum & Son, Willows, is expecting to be called to national service, it has been decided to disperse their herd.

For a number of years the Slocums have been important factors in Duroc circles of California. Last year Clayton visited a number of the leading herds of the Middle West and purchased one of the best collections of breeding animals brought to this state. It was their intention to build up a herd of the first rank, and the foundation was firmly established with the leading blood of the breed. The influence of this herd for good was indicated by the showing made at the 1918 state fair by Glenn County breeders, who exbibited over 100 head—nearly all coming originally from the Slocom herd.

In a recent letter Mr. Slocum says: "It is certainly a keen disappointment that we find it necessary to break up our herd. But I nave been placed in Class One-A, and my father does not feel able to carry on the herd alone. I expect to be called any day, but I assure the Duroc breeders of California that after I come back from "going over the top" that my first move will be to assemble another herd."

It is unfortunate that such breeding establishments are forced to suspend operation. A high class herd of any kind is a national asset that can not be replaced in a day. Now, as never before, efforts should be made to hold choice collections of breeding animals together.

HEREFORD SALE AT SAN FRANCISCO

Forty-five head of Hereford bulls and females will be offered at public sale by the Pacific Coast Hereford Breeders' Association at San Francisco, November 22. The sale will be held on the grounds of the California International Live Stock Show.

The sale held by this association last spring at the University Farm, Davis, was one of the most successful consignment sales held in the state, and President H. H. Gable states that every effort is being made to sell a better lot of cattle this month. About one-half of the sale will consist of California Herefords and the balance will be made up from Colorado and Nevada herds.

From the point of breeding and quality the offering will prove especially attractive to the man who plans establishing a pure bred herd and also to the breeder who wishes to expand his own operations.

This state presents one of the most inviting fields for the breeder of Herefords, and there should be ten herds where there is one today.

A catalog of the offering can be obtained from W. R. Madden, Dixon, California, who is secretary of the association.

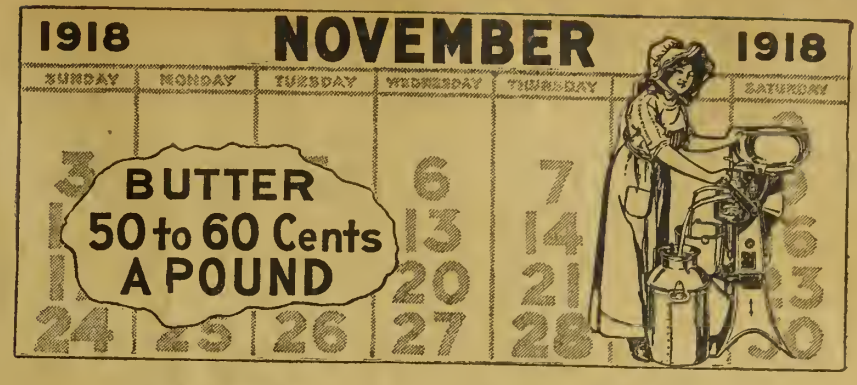
WYOMING HEREFORDS MAKING WESTERN CIRCUIT

The Hereford Corporation of Wyoming, owners of the largest herd of registered Hereford cattle in the world, have an exhibit at Exposition Park, Los Angeles, waiting for the opening of the Liberty Fair.

This herd has a long and interesting history. It was founded in 1882 by the Swan Land and Cattle Company, who made several extensive importations from England, and since the early days of the herd no females have been purchased. This fact is all the more interesting when it is stated that the herd as a whole has changed ownership at least twice since it was established. The present owners are continuing the policy of retaining the females, and at the present time there are over 900 head of cows in the breeding herd.

While the policy of adding no new females has been adhered to, the herd has always had the service of the best Anxiety-bred bulls.

The cattle are handled on a 25,000 acre ranch, just east of Cheyenne, and under conditions that tend to produce superior breeding stock. The herd is a Western herd and the owners know the kind of bulls that meet Western demands.



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This is true whether you have no separator, or an inferior or half-worn-out machine, or even an old style De Laval.

In cold weather your waste of butter-fat is relatively greater, either with gravity skimming or a poor separator; and at present prices for cream a De Laval would very soon pay for itself out of its own savings.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

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LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST.
Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Acme Ensilage Cutters and Blowers, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Catalogs of any of our lines mailed upon request.

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

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Percheron, Belgian and Shire Stallions

My new shipment of Stallions has arrived consisting of Percherons, Belgians, and Shires personally selected by me from the best breeding sections of Iowa, Illinois and Indiana.

Two, three and four year olds that weigh a ton or better. The heavy boned, clean legged kind with lots of style and action.

The largest collection of high class Stallions west of the Rocky Mountains.

Prize winners at this year's big Eastern shows. Life Insurance and State Certificate of Soundness furnished with every horse. If in need of a really high class Stallion come and inspect my horses or write for full particulars. I can suit you in price, quality, and terms.

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Patterson, Stanislaus Co., Cal.
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FORT WORTH, KNOXVILLE, BRANDON, EDMONTON, HONOLULU, SPRINGFIELD, DES MOINES, LINCOLN, TOPEKA, SYRACUSE, LOUISVILLE, NASHVILLE, OKLAHOMA, CHATTANOOGA.

These are Aberdeen-Angus victory points thus far in 1918. Beginning with the Fort Worth Fat Stock Show last March, when the "Doddie" steers won all single steer grand championships over all breeds in both the open and Boys' Baby Beef Classes, the victorious drive has continued with the state fairs.

At Springfield, Ill., Aberdeen-Angus won both single and steer herds grand championships; at the Iowa State Fair an Angus calf stood at the top of the class of 107, the pick of over 700 entries in the state Boys' and Girls' Calf Feeding Contest; at the Nebraska, Oklahoma and Kansas Free State Fair, Aberdeen-Angus steers were grand champions; at the Kentucky State Fair the champion six head of steers were Aberdeen-Angus; at the Tennessee State Fair the $500 Caldwell Special for the best exhibit of live stock was won by a herd of Aberdeen-Angus; at Chattanooga another Angus herd won a similar class; at the New York State Fair an Angus steer was Grand Champion. Both best beef herd and carcass contest at the first Territorial Fair in Hawaii went to Aberdeen-Angus. At Brandon and Edmonton Spring Shows in Canada the grand champion steers were Aberdeen-Angus, and the Boys' and Girls' Calf Feeding Contest winners were the same kind. Free literature.

AMERICAN ABERDEEN-ANGUS, BREEDERS' ASSOCIATION
817-CC Exchange Avenue CHICAGO

Sweetwater Durocs

Great Model
By Great Wonder and Model Lady 4th

Grand Golden Model
By Grand Model

AT THE 1918 SOUTHERN CALIFORNIA FAIR AT RIVERSIDE

Our herd, together with the herds of our customers exhibiting Great Model and Grand Golden Model stock won the following:

Grand Champion Sow	Sr. Champion Sow
1-2-3—Sr. Boar Pig.	1-2-3-5—Jr. Boar Pig Futurity.
2-3—Jr. Boar Pig.	1-2—Aged Sows.
1-2-3—Sr. Yr. Sows.	1—Jr. Yr. Sow.
2—Sr. Sow Pig.	1-3-4—Jr. Sow Futurity.
2—Jr. Sow Pig.	1-2-3—Futurity Litter.
2—Young Herd.	1-2—Boys Pig Feeding Contest.
1—Produce of Sow (sired by Great Model).	
1—Get of Sire (Pig by Great Model).	

The above were shown by Dr. Michael Creamer, Owensmouth; Falfadale Farm, Perris; George Jr. Republic, Chino; and W. B. Hewitt, Van Nuys, besides ourselves.

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As good as the best and better than the rest. A boar or a sow pig sired by my great herd boar Director, and out of one of my choice sows will add prestige to your herd. I am booking orders now for the pigs of March and April farrow. Write now and place your order.

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IT MAKES THEM FAT

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When writing advertisers, mention The Cultivator.

THE MILL FEED SITUATION

It is almost impossible to secure mill feeds. This condition is not local but obtains through the country. Mills are operating under instructions, the policy of the government being to export wheat rather than flour. Wheat can be handled cheaper, and then too the foreign needs absorb all the by-products. Large quantities were being used in this country in the manufacture of proprietary feeds.

Apparently the food administration is making an effort to check the manufacture of prepared stock feeds. The following is the latest ruling issued:

Revised food administration regulations now in effect limit the amount of wheat by-products which manufacturers may combine with other feeds. The relative cheapness of wheat feeds resulting from the controlled price might, it is recognized, be an incentive for feed manufacturers to use larger amounts of wheat by-products than in the past for mixing with coarse grains and selling this mixed feed at uncontrolled prices.

A new rule in the latest food administration regulations specifically prevents this practice. The text of the rule follows:

Feed to be mixed in 1917 proportion only (as amended September 20, 1918). No wheat miller shall mix any greater percentage of his output (1918) of wheat mill feed with other feeding stuffs, or sell any greater percentage to feed mixers for such mixing, than he mixed or sold in the year 1917.

Investigations by the food administration have shown that the practice which this rule prevents has not become prevalent, and the regulation is principally one of safeguard.

In addition to this means of control, a similar rule, effective October 1, 1918, provides:

The manufacturer of commercial mixed feeds shall not use more wheat mill feed in the manufacture of the mixed feed than he used in the corresponding month of the year 1917.

The profits which manufacturers of mixed feeds may take are limited to a specified reasonable margin.

These rules do not apply to farmers who mix their own feed, but they will be asked to sign a pledge of honor "not to use wheat mill feeds for any other purpose than the feeding of dairy cattle, poultry, young pigs, young calves or the preparation of a weekly bran mash for work animals." In addition the farmers are asked to agree not to feed any more wheat feeds than is customarily fed to such animals and not to have at any time more than a 60-day supply of wheat feeds on hand.

The purpose of these regulations and pledges is to make possible an equitable distribution of wheat mill feeds so that the benefits of controlled prices may be shared by the greatest number of producers and users of wheat feeds.

It is said that the bran and middlings are now being used to pack ammunition. The bran and middlings thus used are fed to army horses after the ammunition is unpacked.

DANISH CATTLE AND BUTTER FIGURES

Due chiefly to shortage of feed, the number of cows in Denmark is expected to decrease by about 100,000 within the next six months. The present estimated number of cows in that country is 950,000, which is about 200,000 less than in the summer of 1917. According to reliable reports received by the United States food administration the reduction in Denmark's butter supply will exceed 2,000,000 pounds during the coming year.

Facts like these should remind United States dairymen of the growing dependence of foreign populations on American dairy products. In pre-war years Denmark exported butter to the British Isles which now must look to other sources of supply.

GERMANY CAN NEVER WIN THE WAR!

"She could never win it even though her armies marched simultaneously through the streets of Paris and London.

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GOVERNMENT ACCREDITED DAIRY HERDS

Every dairy herd in the United States that on July 1 had been officially accredited as free from tuberculosis or that had passed successfully one test with a view to certification is listed in a publication just issued by the bureau of animal industry, United States department of agriculture. Copies of the list are available for the use of state and municipal officials and private persons.

Certificates of freedom from tuberculosis are soon to be issued by the bureau of animal industry to all the owners of the accredited herds. Certificate No. 1 is to go to the United States Soldiers' Home in the District of Columbia. The Holstein-Friesian dairy herd at this institution includes 134 registered pure bred cows and is one of the oldest accredited herds in the United States.

Control with a view to the eventual eradication of tuberculosis in cattle is being accomplished by systematic efforts of federal and state authorities in cooperation with cattle breeders' associations and herd owners.

A definite plan was adopted in 1917, whereby herds of cattle passing the prescribed number of official tuberculin tests should be certified or accredited as free from tuberculosis.

An accredited herd is one that has successfully passed two annual or three semi-annual tuberculin tests applied by regularly employed veterinary inspectors of the bureau of animal industry or of the state where cooperative work is conducted, and has otherwise complied with the regulations governing the work.

The work is thought to have been in progress long enough to justify publication of the results. If the status of any of the accredited herds should be changed, prompt notice is to be given to the officials of the various states. Additional lists are to be published from time to time.

WEIGHT FOR STANDARD PACKING HOGS REDUCED

In an open letter addressed to the food administration, San Francisco, the Western Meat Company announces that in the future their quotations on packer hogs will be based on weights ranging from 150 pounds to 250 pounds, instead of the old range of 150 pounds to 300 pounds.

Last fall, owing to the large amount of soft corn, there was a general heavy feeding of hogs, with a consequent large increase in their weight when they arrived at market. Foreign orders were filled with fatter and heavier hogs than the European populations had been accustomed to, and foreign buying agencies now request a return to the customary weights.

From the present outlook, swine producers may anticipate preference for lighter weights of hogs. This country is not likely to have to repeat any request for heavy feeding.

Heavy weight stuff will be taken, of course, but the Western Meat Company state that their spread in prices between the heavier weight and the weight for the standard packers will be determined according to the number that are received and the possibility of disposing of the heavy cuts.

HOW TO CLEAN DAIRY UTENSILS

Most of the bacteria which get into milk come from the utensils, such as cans, pails, strainers, coolers and separators, which have not been properly cleaned. The University of Missouri college of agriculture recommends the following method for cleaning the dairy utensils:

1. Rinse in lukewarm water as soon after use as possible.
2. Wash in hot water containing washing powder which will remove grease.
3. Rinse in clean, hot water and place in live steam 15 seconds, drain and place right side up until steam evaporates. On the farm where steam is not available, sunning will give effective results. Drying should not be done with a cloth, but by heating the utensils in steam or an oven sufficiently to evaporate the moisture.
4. Invert in a clean protected place when dry.

HOLSTEINS
To Suit Every Purse

The Frst Tulare Sale contains a select lot of cattle, from very highly bred, high record animals that should sell up into four figures, to clean straight cattle of sound breeding but that have not yet had an opportunity to make official records and that will no doubt sell accordingly. The sale will be held at

Tulare, California
Wednesday and Thursday, November 20-21, 1918

125 Registered Holstein Cows, Heifers and Bulls

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A. W. MORRIS & SONS, Woodland.
BRIDGFORD COMPANY, Knightsen.
C. L. HUGHES, Sacramento.

Some of the Females to be Sold

THE HIGHEST RECORD JUNIOR TWO YEAR OLD ever sold in the west. She made over 24 pounds butter in seven days and is bred to the twice Grand Champion bull King Segis Alcartra Prilly.

A 17 POUND JUNIOR TWO YEAR OLD daughter of Mutual Fobes Longfield De Kol, bred to the 36 pound $6500 bull, King Korndyke Pontiac 20th.

A DAUGHTER OF A 31 POUND COW bred to King Korndyke Pontiac 20th.

SEVERAL RICHLY BRED YOUNG COWS AND HEIFERS bred to King Korndyke Pontiac 20th.

A DAUGHTER OF A 31 POUND FOUR YEAR OLD bred to the twice Grand Champion, King Segis Alcartra Prilly.

AN 18 POUND JUNIOR TWO YEAR OLD daughter of King Segis Pontiac, bred to King Segis Alcartra Prilly.

A DAUGHTER OF KING SEGIS PONTIAC 13TH bred to the 35 pound bull Segis Pontiac Abbekerk.

A DAUGHTER OF PRINCE GELSCHE WALKER bred to Sir Aaggie De Kol Acme.

TWO GRANDDAUGHTERS of the former world's record cow, Finderne Pride Johanna Rue.

TWO DAUGHTERS of Sir Skylark Ormsby Hengerveld.

A 20 POUND COW bred to Sir Aaggie De Kol Acme 2nd, five of whose seven nearest dams average over 1100 pounds butter in one year, second highest in world for a bull of service age.

FOUR OTHER WELL BRED COWS AND HEIFERS bred to Sir Aaggie De Kol Acme 2nd.

SEVERAL HIGHLY BRED HEIFERS bred to King Sadie Vale Idyl Segis, son of the 35 pound state record four year old, K. P. Idyl Segis.

AN 18 POUND THREE YEAR OLD daughter of a 34 pound sire and a 30 pound dam, bred to King Segis Alcartra Prilly.

A DAUGHTER OF KING KORNDYKE SADIE VALE bred to King Segis Alcartra Abbekerk, 30 pound son of the $50,000 bull.

TWO 23 POUND COWS bred to Prince Hiske Walker, full brother to the former state record 34 pound four year old Lady Hiske Walker.

A FULL SISTER TO A 27 POUND FOUR YEAR OLD bred to Prince Hiske Walker.

A DAUGHTER OF A 26 POUND COW bred to Prince Hiske Walker.

A GRANDDAUGHTER OF KING SEGIS bred to It State Bells.

A DAUGHTER OF KING SEGIS PONTIAC JANNEK bred to King Mead of Riverside.

A 26 POUND FOUR YEAD OLD granddaughter of De Kol 2nd's Butter Boy 3d.

A DAUGHTER OF SEGIS PONTIAC DE KOL BURKE out of a daughter of King Mead of Riverside.

A DAUGHTER OF KING KORNDYKE PONTIAC out of a daughter of King Mead of Riverside.

Great Bulls in the Sale

KING IGNARO MEAD, by King Mead of Riverside and out of a daughter of Ignaro De Kol that made over 29,000 pounds milk and 1077 pounds butter in one year.

IT STATE BELLS, sired by IT, whose dam was the first cow to make over 37 pounds butter in seven days and over 1200 pounds butter in one year, and out of a 27 pound four year old daughter of King of the Pontiacs.

A SON OF KING SEGIS ALCARTRA PRILLY, the twice Grand Champion 30 pound bull, out of a 31 pound four year old daughter of Judge Hengerveld De Kol.

A SON OF KING SEGIS ALCARTRA ABBEKERK out of a great 30 pound dam.

A SON OF PRINCE GELSCHE WALKER out of a 29.67 pound daughter of Korndyke Queen De Kol's Prince.

A SON OF KING MORCO ALCARTRA, son of Tilly Alcartra, out of a 28 pound dam that made 780.40 pounds butter in one year as a four year old.

A SON OF KING KORNDYKE PONTIAC out of a daughter of King of the Pontiacs that made 714 pounds butter in one year as a senior two year old.

A SON OF THE 31 POUND COW, Fidessa Helena.

AND MANY OTHERS of first class type and breeding, completing a rare offering from which breeders and dairymen may select.

Females Bred to these Outstanding Bulls

PRINCE ALCARTRA KORNDYKE, son of the 40 pound cow Tilly Alcartra.

KING MORCO ALCARTRA, son of the 40 pound cow Tilly Alcartra.

KING KORNDYKE PONTIAC 20TH, son of the 36 pound junior three year old, Miss Valley Mead De Kol Walker.

KING SADIE VALE IDYL SEGIS, son of the 35 pound state record four year old, K. P. Idyl Segis.

SIR AAGGIE DE KOL ACME, son of the 35 pound cow Aaggie Acme of Riverside 2nd who holds the world's official record for butter in one year.

SIR AAGGIE DE KOL ACME 2ND, five of whose seven nearest dams average over 1100 pounds butter in one year, second highest in world for any bull of service age.

SEGIS PONTIAC ABBEKERK, son of the 35 pound cow Changeling Tidy Abbekerk Gem, the only 35 pound cow in the west that made over 34 pounds butter in seven days at her previous freshening.

SEGIS PONTIAC DE KOL BURKE, son of the 32 pound cow Riverside Sadie De Kol Burke, who formerly held all world's milk records from seven days to two years.

KING SEGIS ALCARTRA PRILLY, son of the $50,000 bull King Segis Pontiac Alcartra and a 30 pound granddaughter of Prilly. He has twice been Grand Champion at California State Fair.

KING SEGIS ALCARTRA ABBEKERK, son of the $50,000 bull and a 30 pound four year old daughter of Tidy Abbekerk Prince.

KING IGNARO MEAD, son of King Mead of Riverside and a daughter of Ignaro De Kol that made over 29,000 pounds milk and 1077 pounds butter in one year.

IT STATE BELLS, son of the 37 pound bull It and out of a 27 pound four year old daughter of King of the Pontiacs.

PRINCE HISKE WALKER, son of Prince Gelsche Walker, and full brother to the former state record 34 pound four year old, Lady Hiske Walker.

PRINCE RIVERSIDE WALKER, son of Prince Gelsche Walker and out of the same dam as Aaggie Acme of Riverside 2nd.

One of these bulls is out of a dam that made over 1300 pounds butter in one year, four are out of dams that made above 1100 pounds, and two others are out of dams that made above 1000 pounds. THIS IS THE HIGHEST RECORD GROUP OF REFERENCE SIRES EVER LISTED IN A WESTERN SALE. WHAT WILL THEIR CALVES BE WORTH OUT OF THE GREAT COWS AND HEIFERS IN THIS SALE?

Every animal in the sale positively guaranteed to be a breeder; every animal over six months of age tuberculin tested and sold subject to retest by the buyer.

Catalog in preparation. Write for one.

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200 acres near Watsonville, all ideal apricot land. Adjoining orchards that have yielded gross from $300 to $400 an acre annually for past ten years. NO FROSTS, NO IRRIGATION. Part level, balance hill and rolling; 80 acres this season in beans; 40 acres in oats; balance carried 40 head horses in pasture; 20 acres fine potato land; about 1000 cords oak wood standing. Fronts on two county roads. Planted to cots will sell for $250.00 an acre in two years; 20 acres now in three year cots. Lots of water from creek and springs. Ideal picturesque building site. Owner will sacrifice for $65.00 an acre. Half cash, balance long time.
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WATSONVILLE, CAL.

SNOHOMISH COUNTY, WASH. FARM LANDS. The greatest proposition on the market for the man who wants a farm; 12,000 acres to select from, 3½ miles salt water front, 20 miles of Beautiful Lake Shore, good towns, railways, steam boats, factories, mills, schools, churches, paved roads; where the largest profits are made, where the great variety of crops and wonderful productive climate make it the most productive farm section of America. Good lands in good localities as low as $25 to $35 per acre; 10 yearly payments; send for maps and literature to the
BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

For Sale — A going dairy and alfalfa ranch, adjoining a very prosperous city in San Joaquin Valley, (160 acres). Good two-story 8 room house, sanitary milk house, barns, shade and fruit trees, grapes, nuts and berries. Complete outfit of farming implements, wagon, buggy, etc. Irrigating water supplied by the most dependable canal company in the county. Good well with engine and large tank for stock and domestic purposes. This ranch can with some expense be admirably subdivided. Price $25,000. Half cash, balance in 3, 5 and 7 years. The People's Real Estate & Loan Co., Roberts Bldg., Los Angeles.

For Sale—10 acres half mile west of Charter Oak, on Valley Boul. Curbed, cement walks, driveway, tennis court, porches; 11 room modern house; large barn, 2 garages, all concrete floors. Electric lights, gas and domestic water. Two pipe lines. Irrigating water. Covina and Oak Well. 626 Valencia orange trees with $4000 to $8000 worth of fruit on. 385 Avocado fruit trees. All Fuerte except aoout 25. Must sell and take son to Arizona on account of asthma. Address Box 56, Charter Oak California.

STATE FARMS FOR SETTLERS
Thirty-one farms and five farm laborer's allotments in the State Land Settlement at Durham are now open to the inspection of intending settlers. Applications will be received up to noon, November 20, 1918. For particulars regarding prices, terms of payment, address George C. Kreutzer, Superintendent, Durham, California.

For Sale or might rent, 80 acres improved 7 miles west of Bakersfield. Plenty water, shallow lift, buildings, fences, good soil, intelligent work will raise any crop including cotton, $150 per acre. Owner, W. F. Marks, 226 South Main St., Los Angeles. Phone Main 1499.

Sacrifice Sale — Alfalfa and dairy ranch, about 80 acres in new developing section of Escalon. Good rich soil. Fine location. Price including over $2500.00 in stock and farming tools if sold this month, $23,000.00. Owner, A. Rice, Escalon, California. Phone 9F21 Escalon.

A Three Thousand Bird Capacity modern ranch. Gas, electricity. Furnace in house. Well. Los Angeles eleven miles. Wetherbee Ranch, Lankershim, California.

For Sale—35 acre river bottom farm in Victor Valley. Box 74, Victorville, California.

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SPECIAL
Flemish Giants and Long-haired Black's both the largest rabbits known and both fur and meat stock. Also a fine line of New Zealand and Belgian Hares. Guaranteed stock shipped anywhere. Write for particulars. PINE RIDGE RABBITRY, L. J. DOBBINS, Monterey, Cal.

Go Into Business for Yourself — Raise rabbits for meat and fur. Raise stock for us. We buy all you raise. Orders booked now for March delivery. Our booklet mailed for 10 cents. Los Angeles Fur Farm, Dept. C. C., 2669 N. Griffin Ave., Los Angeles.

150 New Zealand Reds and Flemish utility does and bucks now ready for breeding, also 25 bred does, some with litter now. Better order now if you want to get good stock and save money. J. L. Olsen, 13506 Erwin St., Van Nuys, California.

Utility Does — Flemish Giant and New Zealand, 6 and 7 months old, for sale, $3.00 each for quick sale. O-O Rabbitry, 115 First St., Watsonville, California.

Money in Rabbits
Raise rabbits for us. Will pay $6.00 per pair. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

For Sale—New Zealand Red, Utility and pedigreed stock. Reasonable prices. Stephen E. Banneck, 330 E. North Hicks Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.

LIVE STOCK

One Registered Percheron Stallion—Black 10 years, 2000 pounds. Four Percheron mares, eight and nine years. Fanita Ranch, Santee, San Diego County.

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Guaranteed to do same work as new.
We sell for less.
WINDMILLS: 8 ft., $29.50; 10 ft., $39; 12 ft., $55 to $65; 16 ft., $135.
REDWOOD TANKS. New and Used, 500 gallon, $13.50; 1000, $19.50; 2000, $27.50; 3000, $35; 5000, $48; 6000, $55; 20,000, $95; 25,000, $135. NEW GALV. TANKS. 500 gal., $22.50; 1000, $39.50; 1500, $48; 2000, $56. Fine Used galv. tanks guaranteed 4500 gal. heavy galv. with top $95; 6000, $120; 8000 extra heavy galv., $140.
RANCH TOOLS: Nearly new 2 gang fine Benecia Hancock plow with new discs, $87.50. Gilpin John Deere 14 inch Riding plow, $35.00; single disc, $48.00; 3 gang, $85; 4 gang, $110; 100 brand new discs, $1.50 to $3.00; spike harrows, $14.75, with new teeth, $18.50, 15 automatic chicken feeders, $25; Killefer cultivators, brand new John Deere, alfalfa cultivator $55; new 1 horse spring tooth cultivator, $9; single spike $7; plows, $3.75; fence stretcher, cable, scrapers, drills, broadcast seeder, bone grinders, hand corn shellers, blowers, 4x5 air compressor, $27; sundries.
PUMPS: Large Myers Bulldozer, $95; small size, $49; double acting Ames, $145; 2½ inch rotary, $38; Horiz. duplex double acting boost pump, $39; double acting tank pump, $11; 4 in. vert. 2 step centrifugal, $150; 7 in. vert. Krogh, $175; 6 in. hor. cent., $95; large pipe fittings, valves, brass cylinders, pump rods. DEMMITT CO., UPSTAIRS, 120 N. Main. YARDS. 816 Yale, Los Angeles. Buy serviceable machinery. No junk wanted.

For Sale—Yuba 12-20 tractor, 3-4 bottom 14 in. John Deere Power Lift Plow, 10 ft. double rigid frame Davenport Disc fitted with road wheels; extra heavy 6 ft. Killefer chisel, together with a lot of extras. Whole outfit is absolutely down to date and ready to work, no worn parts to replace. Always handled by tractor mechanic. Used 8 months. Can save you a bunch of money on this. Address Box 227, Route A, Redlands, California. Suburban 9082.

REMANUFACTURED PIPE
All sizes, standard pipe, and wrought iron screw casing. All kinds of fittings. Guaranteed good as new. Write for prices.
WEISSBAUM PIPE WORKS,
169 Eleventh St., San Francisco.

For Sale—One 60 h.p., one 12 h.p. and one 2½ h.p. Union Gas Engine. One 12 h.p. West Coast Gas Engine. One 10 inch American Centrifugal Pump. One No. 16 Ross Feed Cutter. Fanita Ranch, Santee, California.

For Sale—Bean TrackPULL tractor. Nearly all improvements attached. Perfect order. Very little used. Price One Thousand Dollars. A. Ryder, Loomis, California.

Gasoline Engines, the largest stock of Used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

For Sale—Model J Sandusky Tractor, 3 disc. P. and O. plow. Team mules.
Alberhill Coal & Clay Co.,
Alberhill, Cal. Tel. Elsinore 43.
Los Angeles, Cal. Tel. Main 1326.

For Sale—Holt 75 Caterpillar built last year. Fine condition; 2 heavy Holt 6 disc plows. Now working. J. A. Ream, Warner Springs, California.

Wanted—Small orchard tractor. Have 1913 Reo Touring for even trade. Box 117, Arlington, Riverside, California.

For Sale—Titan tractor 10-20, fine condition, used short time, terms. Call F. B. Byron, 901 East 8th St., Los Angeles.

For Sale—Sampson Tractor 10x25, overhauled and in excellent shape. Cheap. Geo. E. Small, Terra Bella, California.

SEEDS AND PLANTS

Early Amber Sorghum makes the best silage and produces the greatest tonnage per acre. Recleaned seed 9c per pound f. o. b. Stockton. Fancy recleaned Sudan seed at 18c per pound f. o. b. Stockton, in lots to suit. Aurora Seed Mill, 48 N. Aurora St., Stockton, California.

Seed Grain — We can make attractive prices on seed wheat and Winter or Gray oats and other field seeds. Have a full line of nursery stock. Supply of seed grain will be limited. Write now. 28 years in business. Carlton Nurseries, Carlton, Oregon.

R*O*S*E*S 50c per dozen. Fruit and Ornamental Trees, Plants, Vines, etc. Write for catalogue. KAVAN NURSERIES, San Bernardino, California.

Hairy Peruvian Alfalfa Seed—No dodder or other noxious weeds, 37 cents per pound, freight paid. Nels P. Rasmussen, Grower, Coachella, Cal.

50,000 Yellow Calla Elliottiana Bulbs. William Richard, 438 River St., Santa Cruz, California.

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Avocado Seeds—For sale; $3.00 per hundred. Mrs. L. M. Chaffee, Sherman, California.

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Veterinary

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Bony Growth on Knee

I have a mule that has a hard growth on the inside of the joint of the right front knee. It does not seem to be sore to the touch but the mule limps. What can be done for it?—Subscriber, Thermal.

The bony growth was probably caused by a strain or bruise. Some of the small bones of the knee are probably growing together and the inflammation between the bones causes the lameness. Rub it with a little turpentine once a day. Use a round piece of wood and rub it hard every day; this will increase the circulation of blood to the parts and hasten the repair. You will not be able to get rid of it entirely, but will stop the growth and probably stop the lameness.

A Cold

My mule has a cough and her eyes water almost constantly. Is there anything I can do for her?—Subscriber, Thermal.

The cough and tears flowing from the eyes are symptoms of a cold or influenza. To prevent it becoming chronic or resulting in nasal gleet give these powders: Four ounces nitrate of potash, four ounces chlorate of potash, two ounces sulphate of iron and four ounces powdered licorice root. Mix and divide into 20 powders. Give one powder morning and evening in a little dampened feed.

Tape Worm in a Cow

Please give symptoms of tapeworm in cow and treatment for same. I purposely leave out cow's condition and milk flow as I wish you to cover those points in detail.—Subscriber, Galt.

To give a complete discourse and cover all the points on tapeworm in cows would require more space than can be allowed to answer one question, so the necessary points will be covered briefly. The general symptoms would be reduced flesh and impaired flow of milk. Occasionally a few joints of the worm will pass from the bowels and might be noticed in the passages. The eggs of the tapeworm would also pass from the bowels, but would be too small to be noticed. The treatment in adult cattle is not satisfactory, as the tapeworm infests the bowels far back from the stomach and the strength of the medicine given to eradicate them is exhausted before it reaches them. Powdered areca nut is probably the best remedy, and if you think that your cow has such a worm it would be worth while trying to remove it by giving one ounce of the powder every morning for 10 or 15 days. Mix the powder in a pint of milk and give it as a drench.

Worms in Horse

I have a mare that is seven years old and she has worms. They appear in her passages once in a while. They are long and look like fishworms. Her hair is always rough and shedding. She is also very thin in flesh. Kindly advise what to do. — Subscriber, Patchin.

Worms are usually found in horses that are overfed. Of course overfeeding does not cause worms, but it brings on conditions favorable to the worms and with those conditions it is easy for the worms to get started and multiply rapidly. Feed regularly. Divide the grain rations into three equal parts to be given morning, noon and night. Give only a handful of hay at the morning and noon feeds and enough at night to keep him eating for about two hours. Some think that a horse will not eat more than he needs, but that is a mistaken notion. One pound of hay and one pound of grain for each hundred pounds that the horse weighs is enough to last him 24 hours. To get rid of the worms get your druggist to prepare these powders: Powdered gentian, four ounces; powdered nux vomica, two ounces; powdered sulphate of iron, three ounces, and farina, enough to make one pound. Mix and divide into 16 powders. Give one powder every night in a little feed that has been dampened with water. Also get one ounce of aloin, one ounce of powdered ginger and one quart of raw linseed oil. Mix all together and shake well. Divide it into two doses and give one dose five or six days after commencing to give the powders and the other dose about a week later. If you think that the horse still has some worms after using all the powders then mix a pound of good wood ashes with five pounds of common salt and give a tablespoon of the mixture in the feed twice a day. By feeding as directed you will find him gaining slowly and his coat getting smooth and shiny.

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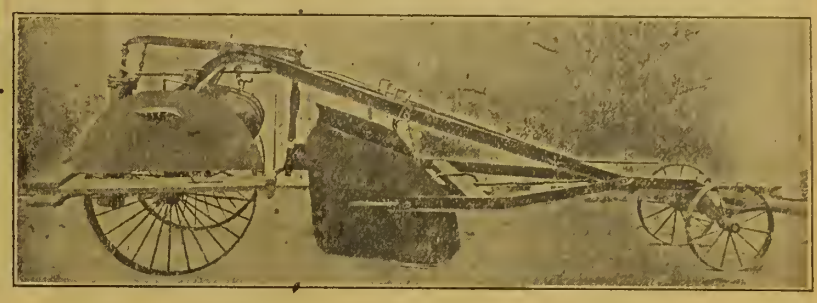

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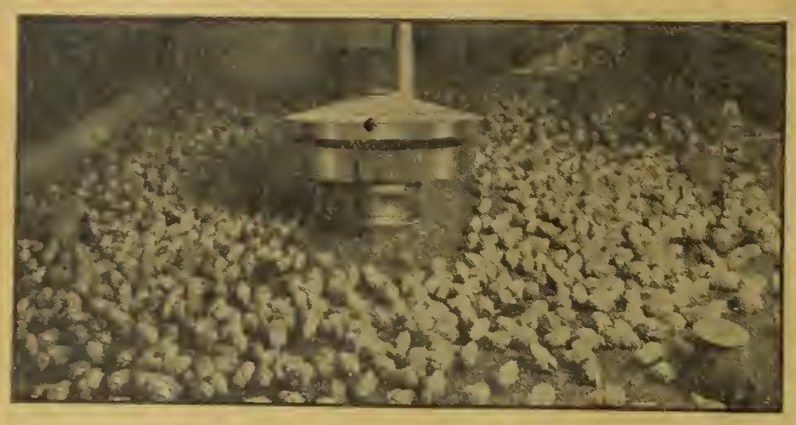

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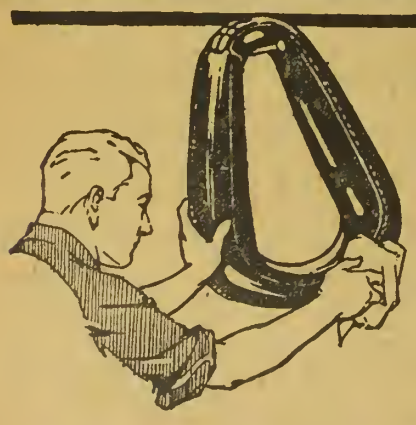

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One Woman's Way

Written for California Cultivator By Jean A. Koethen

FROM the heginning of time women and poultry have gotten on particularly well together. This is not strange, for every woman is a "chicken" to the callow admirer of her girlhood, a "duck" to her hushand and an "old hen" to her critics. The farm woman has always had charge of the farm poultry, and the egg money has been her special perquisite. She raises her haby chicks with the same tender consideration she accords to her children, and doctors a sick hen as cheerfully as she sits up nights with measles or scarlet fever. That her poultry work is always a success and that she instinctively finds the easy way while her hushand is gruhhing in scientific hulletins for the most cumbersome method goes without saying.

I recently visited the ranch of a woman who is making a more than ordinary success with poultry as a side line, and by the old extensive method which our grandmothers practiced. I am not permitted to give her name, but we will call her Miss G. With the help of one hired man she farms a good-sized orange grove on one of the best known avenues of one of our most typical farming communities, and her turkeys and ducks are always in line for hlue rihhons at the county fair.

Miss G.'s poultry runs in the orange grove, and if they occasionally scratch up an irrigating furrow nohody cares. This is the easy way to keep poultry, and it is also good for the trees. That statement of Edward Brown, to the effect that only a fraction of a chicken per acre is kept on all the acreage of California ought to stick in the craw of orchardists who care more for a straight furrow than for food production. The world will go on without their chickens, hut their orchards will not.

"I want you to tell your readers how I treat broken legs," said Miss G., as she hurried me to the harnyard where her fowls make their headquarters. "Every now and then a chicken is kicked hy the horse or the cow, and I was hothered for a long time to know what to do. Finally I hit on this method. I make a thick starch and dip my bandage in it, ruhhing the starch into it till it will hold no more. When this bandage is wrapped around the hroken leg it soon hardens into a cast and stays there till the bone is healed."

Here is another discovery of Miss G.'s: "Do you know where stick-tight fleas breed?" she asked. I said I supposed it was in sandy soil. "Not at all. We were dreadfully troubled with them one year. Finally, when we caught some of the mice that were eating up our feed, we found them covered with the fleas. Apparently, they hred on the mice and were passed on hy them to the poultry."

Except for a few pens, where mother hens or special matings are kept hy themselves, Miss G. runs her poultry—chickens, ducks, turkeys and guineas—all together. The young turkeys are fed hy themselves during their tender infancy, and are hrought up on cottage cheese, nothing else. Later on they eat with the chickens. Miss G. does not heat the clabbered milk on the stove when she makes her cottage chese. Instead she pours boiling water into it. This separates curd and whey without any danger of overheating. The curd is given to the poults, and the whey used for mixing the mash for the chickens.

The hens on this ranch are mainly Black Orpingtons, but a cross of Black Orpington on White Wyandotte has proven especially prolific. The hens from this cross are a sort of mottled white and black, not handsome, hut persistent layers. The ducks are of the Quackless variety. They reach the market size of four pounds in about ten weeks, and the drakes are sold for hreeders when they attain a weight of from nine to ten pounds, which is hetween four and five months of age. The ducks weigh from four to five pounds at the same age. "When the drakes' wings cross nicely," said Miss G., "I know they are ready to hreed."

Miss G.'s method of feeding is extremely simple. The mash, which is fed to all the adult stock, is moist and is composed of coarsely ground barley soaked 12 hours and mixed half and half with hran. She does not use the ground harley as it is commonly sent out hy feed dealers, hut buys the whole grain in quantity and has it ground very coarse to suit her. This is fed in the morning to all. In the evening they get a good feed of corn, which is also bought in quantity wherever it can he had most cheaply. Some of the corn is fed whole and some is cracked. For bahy chicks it is ground into a very coarse meal. Green feed is supplied hy an alfalfa patch.

When Miss G.'s chickens get chicken-pox they are treated with a mixture of one-third turpentine and two-thirds olive oil. This is painted onto the spots with a feather. Sulphur, she told me, is looked upon in her neighborhood as a douhtful remedy, because its use is frequently followed by rheumatism. Calcium sulphide is less likely to he attended with bad effects.

The flock is watered from earthenware crocks which stand under the hydrants. To prevent the growth of algae in the hottom of the crocks Miss G. has two crocks for each hydrant. Every morning the crock which has been used the last 24 hours is rinsed and allowed to stand in the sun empty until the next morning. This keeps the crock clean and sweet and the algae never have a chance.

The Poultry Outlook

As a guide to poultrymen of the United States in conducting their husiness hoth patriotically and profitahly, the food administration outlines conditions likely to continue for several months.

The approach of winter normally stimulates a rapid movement of poultry from farms to market, with a consequent decline in market prices. Such a decline has already taken place this year and its severity may be attributed to the following causes:

Large market receipts of immature and poorly fleshed chickens.

Scarcity of lahor in the poultry-dressing estahlishments.

Inadequate refrigerating space suitahle for holding poultry.

A heavy marketing of moulting hens also has a depressing effect on the market. These fowls are seldom of desirable quality; they average from 10 to 15 per cent under their normal weight and the large quantity of pinfeathers prevents a hright, attractive appearance of the hirds when dressed.

Improve and Stabilize the Market

Producers may assist in improving the poultry market, which in some cases has fallen helow the probahle cost of production, by selling only such stock as is well developed and of good quality. The food administration asks poultrymen particularly:

To withhold from market immature chickens and moulting hens.

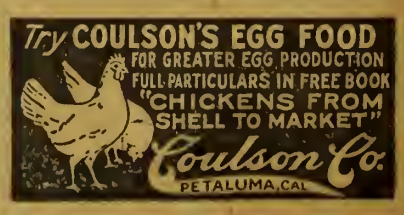
To keep chickens that are still growing until they reach maturity.

To keep all laying hens and the hest pullets.

To extend the normal period of fall marketing so that it will extend into the winter.

These recommendations, it is believed, will not only result in more actual food from poultry and in stahilizing the market, but they will hring numerous other henefits. During corn-shucking time there is a certain unavoidahle waste of corn which poultry can recover and convert economically into meat and eggs at small expense.

The food administration places special emphasis on the desirahility of furnishing the consuming public with



freshly killed poultry during the winter. This will be possible if live fowls are marketed freely during December, January and February, which in former years were months of light receipts. Such a policy of supplying the market will also conserve cold storage space required for export supplies.

Market Journey for Fresh Eggs Only

Developments in the nation's egg situation show the need, probably at very attractive prices, for all the fresh eggs that can be produced. Poultrymen are asked to gather eggs often enough to prevent freezing and to exercise unusual care in preventing all kinds of waste. More than ever before, it will be unpatriotic and wasteful to sell eggs of doubtful quality. Eggs that are unfit for human consumption, or which may soon become so, waste transportation space, clog the channels of trade, cause lower price to producers and thus discourage production.

An understanding by farmers and poultrymen of these general conditions should be of immediate benefit to the poultry industry as well as result in additional food and more stable markets.

AMERICAN EGG LAYING CONTEST

By T. E. Quisenberry

The winning pen in the American Egg Laying Contest at the American Poultry School of Leavenworth, Kansas, is not going to be settled, it seems, until the last few days of the contest. There are ten pens in the breeders' contest all very close and all approaching the 1000 egg mark. In the Leghorn contest four pens have gone over 1000 eggs, and there are only four eggs between the two highest pens. In the yearling hen contest the five highest pens of hens have averaged more than 160 eggs per hen in 11 months, which is extra good for pullets, to say nothing about yearling hens.

One Leghorn pullet from Pennsylvania stands a chance to lay 300 eggs or more. She has laid 280 eggs in 11 months and laid 29 last month. She started laying the second day of the contest last November and has laid over 25 eggs every month throughout the year and has not moulted yet. A bird of that sort is invaluable. A yearling White Plymouth Rock hen has laid 265 eggs, but she is moulting and much cannot be expected of her from now to the close.

A hen that led the contest for the first six months was a variety which is quite new to most breeders. It was a Russian Orloff hen from Iowa. She died when leading all other birds. These birds to the casual observer have a reddish-brown color and are feathered about the face similar to a Houdan, except they have no crest. They seem to be very good layers, as the record of this hen would indicate.

A pen of White Leghorns from Washington took the lead this month by four eggs.

The five highest hens for September in the breeders' contest were as follows: W. D. Holterman, 28 eggs; E. B. Thompson, 28; C. P. Scott, 28; H. A. Hume, 28; F. B. Williams, 27; C. R. Baker, 27.

The five highest pens were: S. C. Reds, Illinois, 110 eggs; White Wyandottes, Kansas, 109; S. C. Reds, New York, 91; Barred Plymouth Rocks, New York, 82; R. I. Whites, New Jersey, 82. This would indicate that the heavier varieties are good fall layers during moult and when eggs are high.

The highest hens to date are: White Leghorns, Missouri, 236 eggs; R. I. Whites, Illinois, 248 eggs; White Orpingtons, Ohio, 223.

TIGHTEN THE NUTS

A farmer recently referred to the fact that many a tractor owner is careless in the small things which have to do with the upkeep of the tractor. He felt that the time would be well spent if each farmer should spend at least a portion of the time that he formerly spent in the care of horses, in the care of his tractor. He should see that all nuts and bolts are tight; that everything is in alignment; the crank case washed out every four or five days and in fact all parts where dirt may accumulate, should be cleaned out at about the same intervals.

There's Cheer in the

Pictures from Home

To a homesick boy at the front, a picture of Dad waiting at the end of the lane while "Shep" brings up the cows is worth more than the Croix de Guerre.

Pictures of mother, how much they mean to him now! And of kid sister—perhaps she is "wearing her hair up" by this time—all the old familiar scenes around the farm, yes, and that little girl with the big blue eyes that lives down in the village—these will mean a world of comfort to the boy who is lonesome among a million strangers.

The Y. M. C. A., the Red Cross, the Knights of Columbus and kindred organizations are doing a world of good in ministering to the bodies and minds of our boys. But in their hearts, homes are first. Cheerful letters and cheerful pictures from home—these will keep their hearts light and their courage high.

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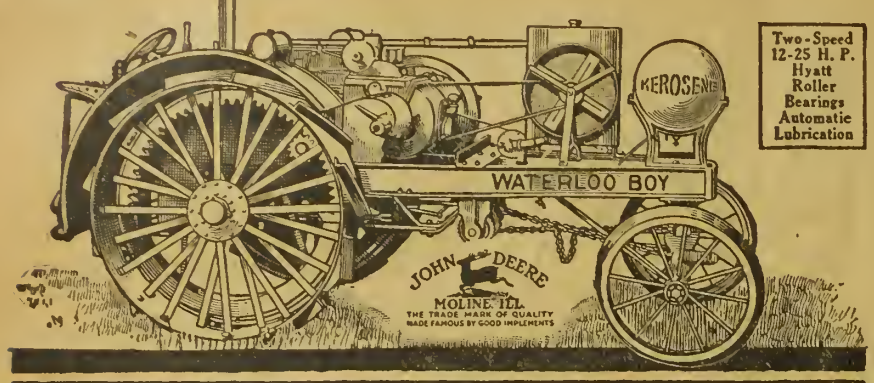

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Write for free illustrated catalog giving full information.

Geo. W. Brending, Milford, Ill., writes: "Your tractor has given complete satisfaction. I plowed seventy acres in eight days with a three-bottom John Deere Plow; did most of my discing with it using two 18 in. wheel discs at all times. Kept close record of operating cost—$2 per day paid for all fuel and lubricating oil when doing a full day's work."

Chas. W. Carlson, Stromburg, Neb., writes: "Your tractor is O. K. It is cheap to operate—not more than two gallons kerosene to the acre, plowing good depth, with 3-bottom 14 in. John Deere Plow. Plowed old alfalfa, sod pasture, stock and stubble ground without trouble. I use the tractor to pull 28 in. thresher and thresh 33 loads of wheat to a barrel of kerosene."

JOHN DEERE, 4506 W. Third Ave., Moline, Ill.

Plant Cover Crops

What a wonderful chance for the planting of early crops—now that the early rains have paved the way. Growers of deciduous fruits simply can't afford to overlook this opportunity.

Don't wait—prepare your seedbeds and get your cover crops in *at once*. It stands to reason that the sooner you start—the heavier your cover crop will be. And—the heavier the cover crop the more nitrogen you will put into your soil—the more fertile it will become—the larger your crop returns will be.

Morse's Melilotus Indica
(Bitter Clover)

is a tested, dependable, *scarified* seed. You can count on it—to a greater extent than many of the other legumes. It has far out-yielded common vetch—and stands the frost better. Again—it is far cheaper than vetch this year.

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Delay Buying Until You Have Compared My Samples With Seed Others Offer

E. F. Sanguinetti Yuma, Arizona

Queries

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Lima Beans in Poultry Ration

Will you tell me what food would be good to mix with dry Lima beans (cooked) in a mash for laying hens, that the mash may be well balanced, holding as nearly as possible to the proportion of 1 to 4.6 protein to carbohydrates?—Subscriber, Orange.

A mixture of one part ground Lima beans, (by measure), two parts wheat bran, two parts ground barley and one-half part beef scrap will give you a mash with a nutritive ratio of approximately 1:4.65, which is close enough. It is impossible to figure closer without knowing the quality of the beef scrap, which varies from a nutritive ratio of 1.0 to 1:1.1.—J.A.K.

Chicken Pox

What is the proper way to destroy chicken pox virus? Had it among the hens in the spring and it continued through the young chicks until we finally vaccinated them all. Chickens have free range. Have sprayed the houses which are open except a roof with chicken wire on sides, also their resting place through the day with creosote. Can lime be used? — Subscriber, Thermal.

Cresol is recommended by experiment stations as the best poultry house disinfectant, but I cannot learn where this drug, in its pure form, is kept. There are several cresol preparations, however, of which cresylol is one, which can be had from both drug stores and poultry supply houses. I think any of these would kill the chicken pox germ, and I am sure a weak solution of carbolic acid would. Crude carbolic acid and kerosene (five parts kerosene to one part crude carbolic) is a good germicide if the crude carbolic is of the right strength, but crude carbolic is an uncertain proposition. It would be well to use boiling water wherever it can be used first, then paint with one of these preparations, making sure that not one inch of surface is untouched. Neither creosote nor lime is a sufficiently strong germicide. It is better to paint than to spray unless you have a powerful spray pump and make sure the germicide touches every bit of the walls, roosts, droppings-boards and nest boxes. Troughs and drinking fountains should be scalded and then washed with the disinfectant. This is a hard germ to kill and the greatest care must be exercised to make the job a thorough one.—J. A. K.

Hens in Pen

In the Storrs egg laying contests reported in the Cultivator, how many hens are there to a pen? Would like to figure out how many eggs are laid per hen.—Subscriber.

There are five hens to the pen. This is usual in all egg laying contests.

Acorns for Turkeys

Answering Subscriber, Los Angeles, in regard to acorns as turkey feed. I have seen wild pigeons in northern Arizona eat them and get fat, and as there are wild turkeys there also they probably fatten on them as well.—O. P. Hall, Oceanside.

Snuffles

Will you please give the best remedy for snuffles in rabbits (internal remedy preferred, something that can be given in the feed or water), something that is available at most any drug store, and which can be purchased at a reasonable price? Also give formula for good condition powders for rabbits.—Subscriber, Lakeside.

Snuffles or colds if allowed to continue for any length of time are reasonably sure to result in tuberculosis though often a case of nasal catarrh is taken for snuffles. In the case of catarrh good housing, dry warm quarters, with patient isolated from others and being fed lukewarm milk to which is added a few drops of sweet spirits of nitre. If acute case of snuffles it is probably best to put the patient out of his misery.

Fight with Concrete

¶ The way is open

The War Industries Board recognizes farm buildings as necessary to increased food production. No permit is needed for a farm improvement not exceeding $1,000 in cost.

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Household Department

FLOWERS IN FLANDERS

There is a field in Flanders
Where yellow kingcups stand;
Like fair princesses clad in gold
Their joyous court they proudly hold
In the gay meadow land.

There is a wood in Flanders,
A little shimmering wood,
Where the wind flowers sway among the grass
And smile upon you as you pass
As country maidens should.

There is a bank in Flanders
Where celadines a-blow
Lift up their shining head and peer
To see their lovely image clear
In a bright pool below.

And you who go in English fields,
O think not that our days
Are wholly dark or wholly ill,
For there are flowers in Flanders still
And still a God to praise.

—Punch.

VERDUN BELLE

YOU could put a plate of savory pork chops on the parapet and nothing would have induced her to go after them. She actually learned to race for the spot where an improvised gas mask, contrived by her master, could be put over her nose whenever the signal warning of a gas attack was sounded.

Before long, Belle became the mother of seven brown and white puppies They had hardly opened their eyes before the marines' regiment got orders to "hike" for another sector. Some might have thought the dog and her pups would be left behind, but this never occurred to her master. He commandeered a market basket somewhere, put the pups into it and let Verdun Belle trot behind.

In spite of the fact that the amount of equipment which each marine carries on the march is supposed to be all that a man can possibly carry, this marine somehow found strength to carry the extra weight of the basket. Forty miles he carried his burden along the parched French highway. But then came an order to march even farther, and reluctantly the marine was forced to give up the basket. Mournfully he killed four of the puppies, but the other three he slipped into his shirtfront.

Then he trudged on his way, carrying these three, pouched in forest green, as a kangaroo carries its young, while the mother dog trotted trustingly behind.

On the long march another of the pups died, and finally in the maze of men, trucks and wagons Belle was lost. The marine was at his wits' end to keep the two puppies alive, but finally he hailed the crew of an ambulance passing back from the front, turned the puppies over to them and disappeared with his comrades. The ambulance men were unable to induce the pups to eat canned beef and they had no fresh milk. They chased a couple of cows vainly.

Next morning the problem was still unsolved. But it was solved that evening. A fresh contingent of marines trooped by the farm and in their wake—tired, anxious, but undiscouraged—was Verdun Belle. Ten kilometers back, two days before, she had lost her master, and until she should find him again she evidently thought that any marine was better than none.

The troops did not halt at the farm, but Belle did. At the gates she stopped dead in her tracks, drew in her lolling tongue, sniffed inquiringly the evening air and, like a flash—a white streak along the drive—she raced to the distant tree where, on a pile of discarded dressings in the shade, the pups were sleeping.

All the corps men stopped work and marveled. It was such a family reunion as warms the heart. For the worried mess sergeant it was a great relief. For the pups it was a mess-call, clear and unmistakable.

So with only one worry left in her mind, Verdun Belle settled down with her puppies at this field hospital. In a day or two the wounded began coming in, a steady stream. Always a mistress of the art of keeping out from under foot, very quietly Belle hung around and investigated each ambulance that turned in from the main road and backed up with its load of pain.

Then one evening they lifted out a young marine, listless in the half-stupor of shell shock. To the busy workers he was just case number such and such, but there was no need to tell any one who saw the wild jubilance of the dog that Verdun Belle had found her own.

The first consciousness he had of his new surroundings was the feel of her rough pink tongue licking the dust from his face. And those who passed that way last Sunday found two cots shoved together in the kindly shade of a spreading tree. On one the mother dog lay contented with her puppies. Fast asleep on the other, his arm thrown out so that one grimy hand could clutch one silken ear, lay the young marine.

It perplexed some of the hospital workers to know what could be done when the time came to send the marine on to the base hospital. But they knew in their hearts they could safely leave the answer to some one else. They could leave it to Verdun Belle.—Stars and Stripes.

THE SOLDIER'S CHANCES

Great as the danger and large as the losses in the aggregate, the individual soldier has plenty of chances of coming out of the war unscathed, or at least not badly injured.

Based on the mortality statistics of the allied armies, a soldier's chances are as follows:

Twenty-nine chances of coming home to one chance of being killed.

Forty-nine chances of recovering from wounds to one chance of dying from them.

One chance in 500 of losing a limb.

Will live five years longer because of physical training, is freer from disease in the army than in civil life, and has better medical care at the front than at home.

In other wars from 10 to 15 men died from disease to one from bullets; in this war one man dies from disease to every every ten from bullets.

For those of our fighting men who do not escape scatheless, the government under the soldier and sailor insurance law gives protection to the wounded and their dependents and to the families and dependents of those who make the supreme sacrifice for their country.

My Wash Day Problems Are All Solved!

No More Boiling, Toiling Wash Days for Me.

I used to scoff at the idea of there being any other way to get clothes clean and white than by the old fashioned back-breaking method. But thank goodness I had sense enough to try the soap that is proving such a boon to countless housewives.

Now I get my washing out in half the time, with half the rubbing, without boiling the clothes at all—and yet my neighbors tell me I have the whitest clothes on our street. I use Cocoa Naptha Soap which is made by the Los Angeles Soap Co. It comes in a red wrapper with a monkey on it and directions how to use. Try it next wash day and be convinced.

Your guarantee of real winter underwear satisfaction

HANES
This label on every garment. Buy none without it.
GUARANTEE
We guarantee Hanes Underwear absolutely—every thread, stitch and button. We guarantee to return your money or give you a new garment if any seam breaks.

PUT the fleecy warmth of Hanes Heavy Winter Weight Union Suits or Shirts and Drawers next to your skin—and, you're fit to face the stiffest blast the North can let fly! Get the friendly hug of the elastic knit, long-fibre cotton, and prove how perfectly Hanes gives-and-takes with every body movement!

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Shirts and Drawers **HANES** Union Suits

ELASTIC KNIT UNDERWEAR

Realize what Hanes offers you *at a popular price:* guaranteed unbreakable seams; elastic tailored collarette that cannot gap; pearl buttons that are sewed on for keeps! And, behind them all stands Hanes workmanship—perfect knitting, tailoring and finishing—an unbreakable combination!

Illustrated above are Hanes Shirts and Drawers—for many years the American standard at popular prices! Note the snug-fitting, three-button, sateen waistband.

Greatest underwear for boys! Hanes Boys' Union Suits exceed in quality, workmanship and service any boys' underwear we have ever seen. They combine the features of men's union suits with the cosiest warmth.

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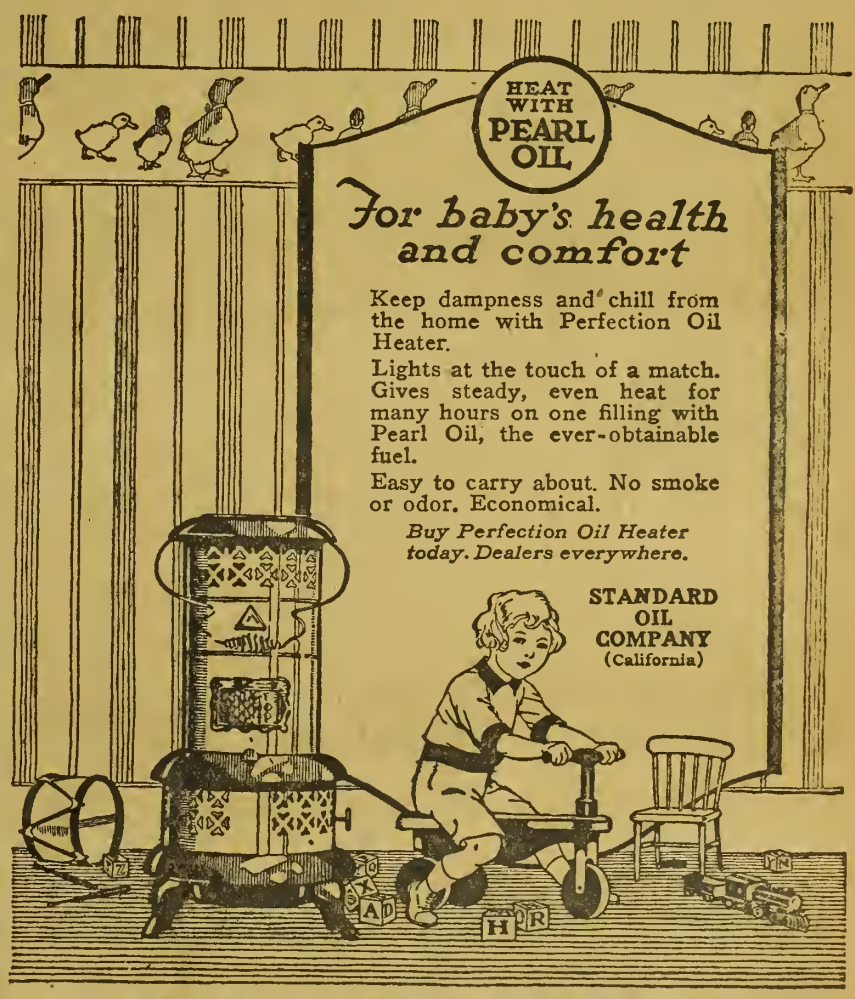
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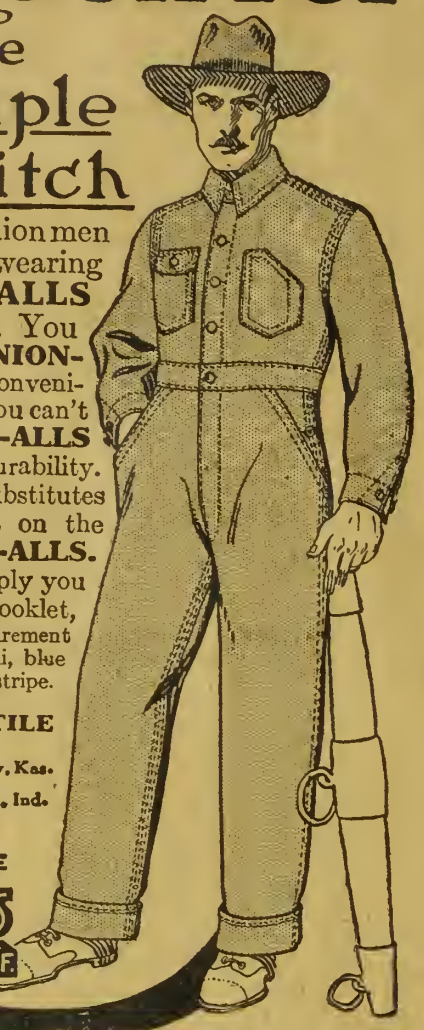

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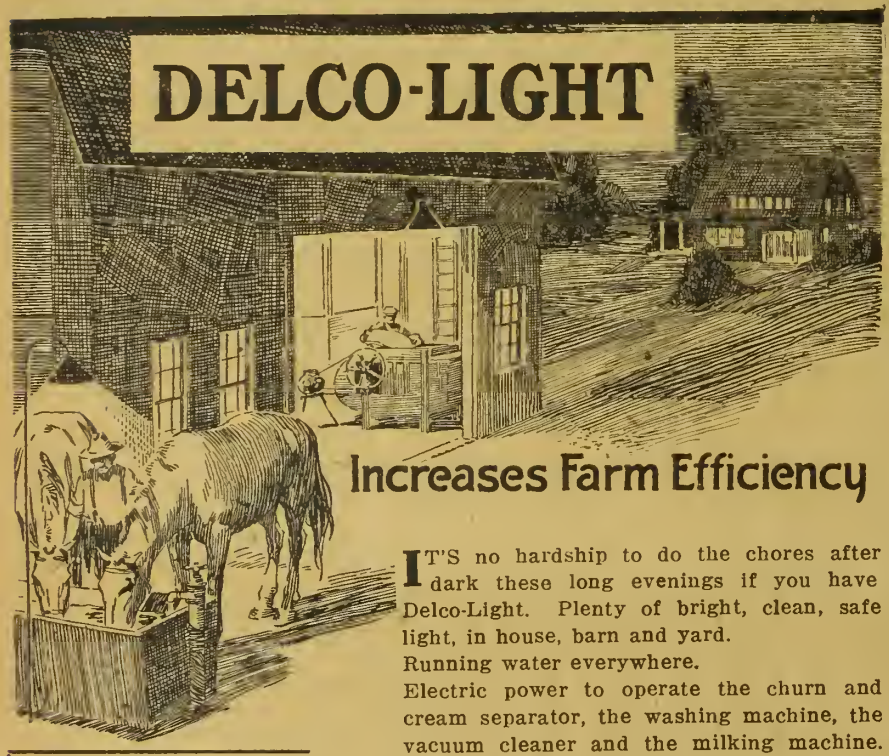

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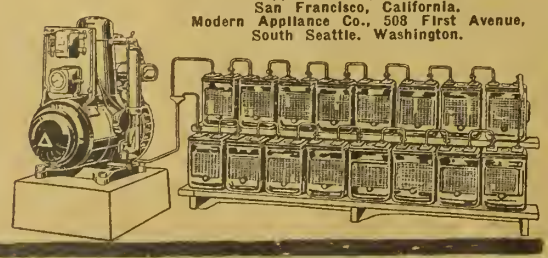

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The Pinch Hitter

It was tightening of the American belt that made this hit possible. The game is won if we keep it up.

SORGHUM RECIPES

Combine sorghum with different seasonings and see what you can do with this native supply of liquid sugar. Try a war cake with sorghum and be sure to can a supply for Christmas fruit cake and mince pies. To obtain the best results add a pinch of soda to the syrup and bring to a boil and skim before using.

Gingerbread

Two tablespoons light syrup, two tablespoons shortening, one and one-half teaspoons soda, one teaspoon salt, one and one-half teaspoons ginger, one-half teaspoon cinnamon, one teaspoon mace, one teaspoon allspice, one egg, three-quarters cup sorghum, one cup buttermilk, two and one-quarter cups barley flour. Cream syrup and shortening, add soda, salt, spices. Beat in egg, add sorghum and buttermilk. Mix thoroughly, add flour and mix lightly.

Hermit Cookies

One-half cup sugar, one-quarter cup lard, one-half teaspoon salt, one teaspoon soda, one egg, one-half teaspoon allspice, one-half teaspoon ginger, one-half teaspoon mace, one-half teaspoon cinnamon, one-half cup currants, one-quarter cup sorghum, two tablespoons butter milk or water, one and one-half cups flour, one-half cup substitute flour. Cream sugar, lard, salt and soda, add the egg and mix. Add sorghum and butter milk, mix. Add flours and spices sifted together, mix lightly, roll out and bake in a moderate oven.

Cornmeal Pudding

One cup cornmeal, one cup boiling water, three cups hot milk, one-half cup sorghum, one teaspoon salt, one teaspoon cinnamon, one-quarter teaspoon mace. Pour the boiling water over the cornmeal, add the hot milk. Cook in a double boiler for ten minutes, add the other ingredients and bake slowly in a greased pan for one hour. Serve with milk or cream.

Chocolate Pudding

One quart milk, two ounces chocolate, one-quarter teaspoon salt, one-quarter cup sugar, one-half cup sorghum, six tablespoons cornstarch, two eggs, one teaspoon vanilla. Heat three-quarters quart of milk in a double boiler to the boiling point. Add the melted chocolate, salt, sorghum and sugar. Add the cornstarch mixed with one cup of cold milk and cook for 20 minutes. Stir to prevent lumping. Add the slightly beaten eggs and cook for five minutes. Stir to prevent lumping. Add the vanilla, serve with light or heavy cream.

SURE OF ONE THING

Gen. Sir David Henderson watched a young cadet aviator who showed signs of trepidation while preparing for his first flight.

"Don't be nervous, man," said Sir David. "You'll come down again. There's no known instance of an airplane not alighting."—Los Angeles Times.

You are wasting precious time every minute that you spend in self-satisfaction.

HOUSEHOLD QUERIES

Strawberry Ice Cream

In answer to query in the Cultivator of September 7 I will tell how I make strawberry ice cream. This recipe makes one gallon.

Four or five eggs, one cup sweet cream, one pint strawberries that I canned. I use no other sweetening. One teaspoon lemon extract. Fill can to two and a half inches of top and freeze.

Possibly my cake recipe will help someone. One cup Karo, one cup of jam or canned fruit, one cup milk, one and a third cups Crisco, three eggs, spices or extract, whichever you like; two teaspoons baking powder, flour. I use this as loaf or layer.—Mrs. C. G. Coy, Tolleston, Arizona.

Pimiento Cheese and Peanut Butter

Please publish recipe for pimiento cheese and peanut butter.—Subscriber, Los Angeles.

Peanut butter is merely peanuts ground to a paste with no addition of oil or water. Some dealers, of course, mix with water. This makes the butter a little lighter in shade, more creamy looking and attractive, and some people prefer to buy it, not realizing that they could add the water as easily as the maker of the butter and pay nothing for the water.

Pimiento cheese is made by adding ground cooked pimiento to cheese of the Neufchatel type or to a fine-grained cottage cheese. The pimiento is thoroughly worked into the cheese, in the form of a smooth paste or showing individual particles of the red, according to the taste of the maker.

SALTING FISH

Large fish having soft fins, small scales, and thin skin should be scaled but not skinned. Remove the head, split down the belly to the vent, and remove the viscera. Make a cut on each side of the backbone inside of the body cavity, cut the bone in two as far back as it can be reached and remove the cut off portion, then make a deep cut along one side of the backbone for the remainder of its length and remove the tail. If the fish are too large to go into the container, cut them to the proper length. The cheeks and the portion between the jaws, including the tongue, of many large fishes are excellent when boiled, and they may be preserved by removing the eyes and gills and packing the heads, after splitting them lengthwise, in the same container with the rest of the fish.

Slender fish, such as mackerel, whiting, large herring, etc., should be split down the back to one side of the backbone for the entire length, the belly walls not being cut. The backbone need not be removed. Smaller fish of the same character need not be split but should be carefully eviscerated. Coarse scaled, thick skinned, spiny finned fishes like black bass, perch, etc., should be skinned, and unless large and thick meated need not be split.

Having dressed and thoroughly washed the fish in water containing a little salt, taking particular care to remove the blood near the backbone, cure them as follows:

Place a layer of coarse salt on the

Since 1902

Pomona DUPLEX-PLUNGER Pumps

One Pump Will Do Your Work

Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

Send for Catalog 103

Pomona "Made Right" Irrigation Gates and Valves

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POMONA, CAL.

Save 1-2 on Fuel

CHEAPEST HEAT YOU CAN BUY

The Sievert Oil Burner burns distillate costing only 7½ cents per gallon in cook stoves, heaters, furnaces, pasteurizers, boilers, etc. Absolutely safe, odorless, very convenient and low priced. MAKES HEAT AT HALF WHAT WOOD AND COAL COSTS. Install it yourself. Write for circular and prices on different sizes, address Sievert Oil Burner Co., 710 North Main St., Los Angeles.

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Three Stroke - Great Capacity - Self Feed - No Danger - Smoothest Bales - Easily Moved and Set - Extra Power - Simple - Durable - Guaranteed - Sold on Easy Payments CATALOG MAILED FREE

-THE ANN ARBOR "35"-

Especially Strong for Alfalfa - Feed Hopper only 39 Inches from Ground - Largest Feed Opening -

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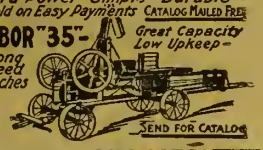

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4 Tools That Fit on 1 Handle. Can be set at any angle. Saves stooping and bending.

Sold by Most Dealers

Schoener adjustable garden tools are sold by most dealers. If your dealer cannot supply you, let us know, and we'll tell you where to get them. Illustrated Folder on Request.

SCHOENER MFG. CO.,
619 Schoener Bldg., St. Cloud, Minn.

$35 to $165

2 and 4-wheeled
AUTO WRECKERS
1450 Central Ave, Los Angeles

Reduce the eat
In wheat and meat,
And toot the tute,
In substitute.

bottom of a tight keg, barrel, or other suitable vessel, and on this spread a layer of fish, one deep, sprinkle salt thickly over these, add another layer of fish, and repeat until the barrel is full or the supply of fish exhausted. The salt and the moisture from the fish will make a strong brine in which the fish should be left for a week or ten days. At the end of that time remove the fish, thoroughly wash them, repack in the barrel, and cover with a freshly made brine strong enough to float a fresh egg. After a week this brine should be drawn off and the barrel filled with a saturated brine; that is, one in which a little undissolved salt will remain on the bottom of the vessel after the solution has been subjected to prolonged stirring. Do not reuse the old brine. The barrel or keg should then be headed and stored in a cellar or the coolest place available. If there should be any leakage, which may be discovered by the sound made when the barrel is struck with a stick at various heights, it should be made good by adding strong brine through a bunghole. If the receptacle can not be filled at once, the fish may be preserved by packing on top of them a cover made of a barrel head or of pieces of wood cleated together to fit the container and weighting it with a clean stone or other heavy article which will not be affected by the salt. The success of the operation will depend on using fresh fish, exercising care in the salting and the proper mixing of the brine, and on keeping the barrel tight and the fish covered with strong brine.

HE'S THROUGH

Capt. Joseph C. Cowell of the Brandywine, who has been submarined three times, said at a dinner in Salem:

"I used to love the sea, but the squareheads with their filthy submarines have made me hate it. When this war is over, do you know what I am going to do? Well, gentlemen, I am going to buy an anchor, sling it on my shoulder, and start walking straight inland.

"I'll walk and walk, and finally, when I come to a place where the natives hold me up and say, 'What on earth is that you are carrying?' I'm going to buy a farm there in that place and settle down for life."—Los Angeles Times.

SAVED EXPERIMENTING

Judge Brown, in commenting on the work of juvenile courts throughout the country, said:

"By long experiment we find that children are in two classes—those who must be led and those who must be driven. Once in a while we don't have to experiment to find this out. I remember one child who, on being committed, inquired:

"'Are you the matron?'

"'Yes, dear.'

"'Well, then, I am one of those boys who can only be managed by kindness, so you had better get some sponge cakes and oranges at once.'."

NO JOKE

War Correspondent Irvin S. Cobb is a poor sailor and on his last trip across the herring pond the young man's sufferings were atrocious.

Roused by his groans and gurgles one stormy night, an officer bent gently over the correspondent.

"Can't you keep anything on your stomach, Cobb?" he asked.

"Only my hands," moaned Cobb.

THE SCOTCH OF IT

Two old Scotsmen sat by the roadside, talking and puffing away merrily at their pipes.

"There's no muckle pleasure in smokin', Sandy," said Donald.

"Hoo dae ye mak' that oot?" questioned Sandy.

"Weel," said Donald, "ye see, if ye're smokin' yer ain bacca ye're thinkin' o' the awfu' expense, an' if ye're smokin' some ither body's, yer pipe's ramm't sae tight it winna draw."—Tit-Bits.

Pat-a-cake, pat-a-cake, baker's man,
Mix up the dough as fast as you can;
The hole in the doughnut for you and for me,
The doughnut for staunch Allies over the sea.

To waste is to give "aid and comfort" to the enemy—and that is treason.

Iron and steel are needed for *war*.

The U. S. Government is calling for the conservation of metals for war uses.

You can help by making your old range "do"

a little longer. Have it repaired, if necessary. If it is past repairing, and you must buy a new range, get a Majestic. It will save *fuel*—absolutely heat-tight. It will save *food*—bakes right always. It will save *repairs*—its *malleable iron* frame is unbreakable and its *charcoal iron* body resists rust 300% better than steel.

Sold by leading dealers in every County of 42 States.

Majestic Mfg. Co., Dept. 203 St. Louis, Mo.

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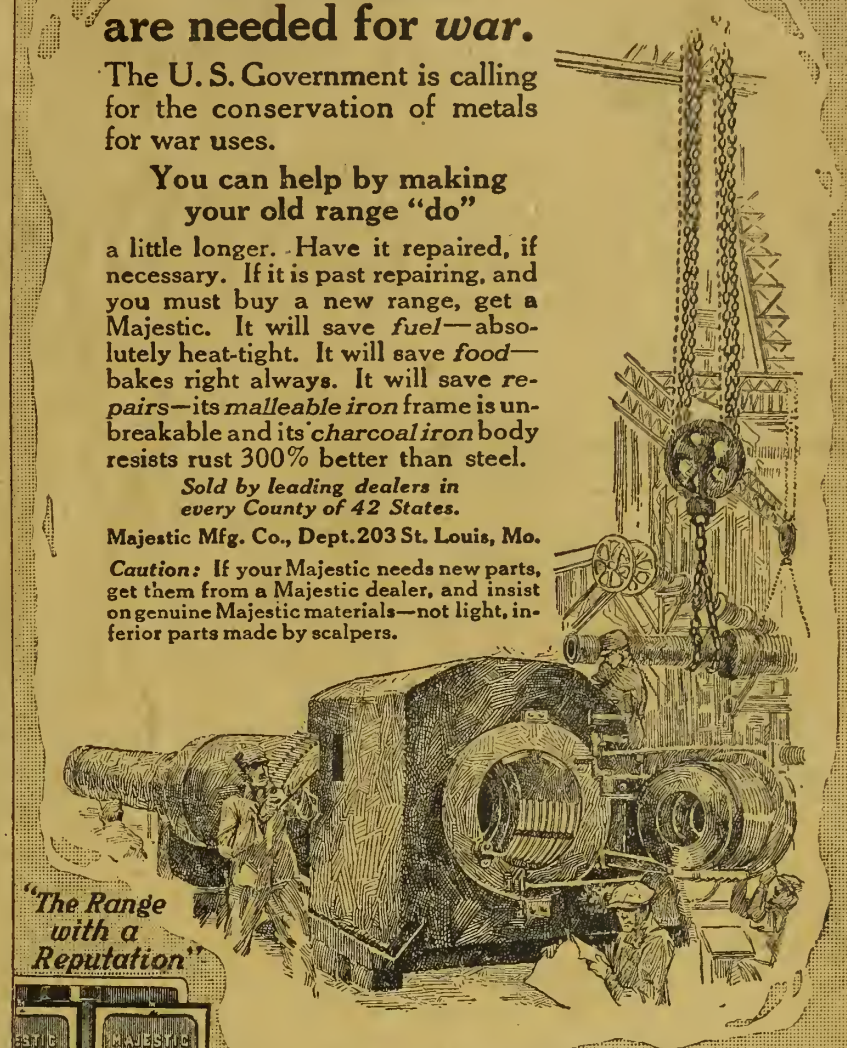
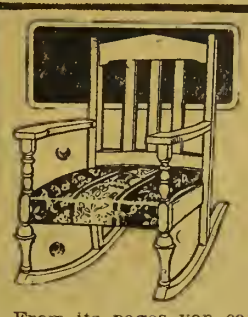


Great Majestic



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MICA AXLE GREASE

A dab of Mica Axle Grease spreads evenly and forms a cool, slippery coating on the spindle—no hot boxes—no lost time—even with big loads. The powdered mica, a natural lubricant, makes the grease last twice as long. Get a can from your dealer today.

STANDARD OIL COMPANY
(California)

Los Angeles Market

Los Angeles, October 29, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.

Cal. Extra Creamery 59

Oct.	23	24	25	26	28	29
'18 ...	60	60	60	..	59	59

Rcts. wk. ending Oct. 28, 191,800 lbs.

CHEESE

Brokers' prices:
California fresh, lb. 30

EGGS

Exchange quotations. Price to retailers 2 to 3 cents higher.

Fresh extras 78
Case Count 70
Pullets 66

Dairy Exchange prices past week on fresh extras.

Oct.	23	24	25	26	28	29
'18 ...	76	76	76	..	78	78

Rcts. wk. ending Oct. 28, 607 cases.

POULTRY

We quote to producers.
Broilers .....37@41
Fryers 33

SULPHUR

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards six times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

Try our new brand of VENTILATED Sublimed Sulphur, 100 per cent pure, for making Paste — (Atomic Sulphur) and for Dusting.

For Lime Sulphur Solution, use our DIAMOND S Brand Refined Flour Sulphur. We can furnish you this sulphur at such a low price that it will pay you to mix your own solution.

San Francisco Sulphur Co.
624 California St. San Francisco, Cal.

We are equipped to make immediate shipment. Send for illustrated booklet; price list and samples. Tel. Kearny 871.

Hens, small, 26, heavy .....26@29
Colored 30
Ducks, lb., 22; ducklings .....23@24
Roasters 30
Roosters, old 20
Turkeys .....31@34
Geese 20
Belgian Hares 18
Squabs .....30@35

LIVESTOCK

We quote cwt. f. o. b. L. A.
Corrected Wednesday morning, October 29, by the Cudahy Company.

Cattle—
Beef steers, av. 1000-1100 lbs.....12.00
Helfers, good 9.00
Cows, good 8.50
Veal Calves 10.00
Canners .....5.00@6.00

Hogs—
Av. 150 lbs. 16.00
Av. 175-225 lbs. 17.00
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers 11.50
Ewes 10.50
Lambs 15.50
Yearlings .....11.50@12.00

POTATOES

Wholesale selling prides:
Burbanks .....2.00@2.50
Sweet, lug .....65@70
Idaho Russett .....2.25@2.35

ONIONS

Wholesale selling price, cwt.
Australian Brown, lug .....1.15@1.25
White Globe, lug .....1.85@1.90

VEGETABLES

Wholesale prices:
Beans—String .....5@6
Limas, lb. .....4@5
Cabbage, cr. .....2.00@2.25
Carrots, doz. .....40@45
Cauliflower, cabbage cr. .....2.25@2.50
Celery, cr. .....3.00@4.00
Corn, lug .....40@85
Cucumbers, lug .....60@75
Egg Plant, lb. .....3@3½
Horseradish, lb. 15
Lettuce, cr. .....50@75
Peppers, chili, lug 45@50; Bell, lug 35@40
Pumpkins, lb. 1½
Rhubarb, bx. .....65@70
Squash—Hubbard, lb 1½
Summer, lug 75
Tomatoes, lug .....60@75
Turnips, doz. 40

FRUITS

Wholesale prices:
Apples—Bellefleurs, bx .....1.25@1.65
Jonathans .....2.70@2.85
Cranberries, 1-3 bbl. 3.75
Figs, lb. .....3@5
Grapes — Homegrowns, Muscats, 6; Tokays, 5@6; Cornichons, 4@5; Malagas, 6½@7; Missions, 4@5; Emperors, 6½ per pound.
Melons—Casabas, lb., 2@2½; Watermelons, lb, ½@1.
Pears—Bartletts, lb., 7@7½; Comice, lb., 6; Winter Nellis, pk. bx., 2.25.
Peaches—Salways, lug, 1.75@2.00; Orange Cling, 1.75.
Quinces, lug. .....85@90
Lemons, pk., 9.00@9.25; loose...5.00@6.00
Seedling, bx. .....5.00@5.50

CITRUS

Oranges—Valencias .....11.50@13.00
Grapefruit, Seedless, bx. 6.00

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....18@20
Amber extracted 16
Fancy white comb, per case.....6.50
Comb Lt., amber, per case .....5.00@6.00
Beeswax, lb. .....32@34

BEANS

Price to retailers (F. E. Harris Co.), cwt.:
Lady Washington 11.00
Navy 11.00
Pinks 8.25
Tepary 7.00
Red Mex. 8.75
Lima 12.50
Blackeyes 7.00
Garbanzos 10.75
Soy 7.75
Lentils 22.00
Kidney 11.75
Henderson Bush Lima 10.50

HAY

Quotations by Nichols - Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:
No. 1 Tame Oat .....26.00@28.00
No. 2 Tame Oat .....23.00@25.00
No. 1 Barley .....22.00@24.00
No. 2 Barley .....19.00@21.00
No. 1 Alfalfa .....20.000@22.00
No. 2 Alfalfa .....17.00@19.00
Quotations furnished by California Alfalfa Growers' Association, Riverside, California.
No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS

See San Francisco market.

San Francisco Markets

San Francisco, October 28, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:
Two-pound squares, parchment wrapped, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.
Dairy Exchange quotations, lb.:
Extras 60

Oct.	22	23	24	25	26	28
'18 ...	61	61	61	61	61	60
'17 ...	45	44½	43½	43½	43½	..

Rcts. wk. ending Oct. 27, 250,500 lbs.

CHEESE

Dairy Exchange quotations:
Cal. Flats .....30@32
Ore. Triplets 37
Jack Cheese, full cream 28

EGGS

Dairy Exchange quotations:
Extras 88
Selected Pullets 76½

Oct.	22	23	24	25	26	28
'18 ...	81	82½	83	85½	86	88
'17 ...	55	56½	56½	55½	55½	..

Rcts. wk. ending Oct. 27, 5879 cases.

POULTRY

We quote to producers, lb.:
Per lb.: Large hens, 37@40; small hens, 34@36; broilers and fryers, ¾ to 1½ lbs., 45@50; 1½ to 2 lbs., 40@43; 2 lbs. and over, 37@40; old roosters, 23@24; young roosters, 37@40.
Belgian hares, live, 18@19.
Jack Rabbits, doz., 2.50@3.00.
Squabs, doz., 3.50@5.00.
Turkeys, dr., 40@42; live, 34@37.

LIVESTOCK

Prices gross weight:
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.
Steers, lb., 10@12; thin, 8@9; cows and helfers, 6½@8; thin, 4@5; calves, 6@11.
Sheep—Lb. gross weight: Wethers, 11½@12; ewes, 9@9½; lambs, yearlings, 12@12½; milk, 14@14½
Hogs—Hard grain fed, welghing 100 to 140 lbs., 16½; 140 to 300 lbs., 17; 300 to 400 lbs., 16½.

POTATOES

Wholesale selling prices at wharf, cwt.:
Gems 2.25
River, new cwt. .....1.45@1.90
Sweets, lb. .....3@3½

ONIONS

Wholesale selling price on wharf, cwt.:
Australian, Brown and Yellow....90@1.00
Garlic, new, lb. .....12½@15

VEGETABLES

Wholesale selling price:
Artichokes, doz. .....40@75
Beans, String, lb. .....4@8
Limas, lb. .....6@8
Carrots, sk. .....1.00@1.25
Celery, doz. .....40@50
Cucumbers, lug .....75@1.25
Pickling, lb. .....2½@5
Onions, green, bx. .....65@75
Egg Plant, lug .....50@1.00
Peas, lb. .....12@15
Peppers, Bell, lug .....50@75
Rhubarb, bx. .....1.00@1.25
Squash—Summer, lug .....50@85
Marrowfat, sk. 1.00
Cream, 75@1.00; Hubbard, sk..1.40@1.50
Tomatoes, lug .....75@1.25
Pumpkins, sk. 1.00

FRESH FRUITS

Apples—Jonathan .....1.50@2.50
Bellefleur .....1.50@2.00
Newton Pippins .....1.25@1.60
Spitzenberg .....1.75@2.50
Bananas, lb. .....7½@8
Berries—Ch.: Strawberries, 9.00@12.00; raspberries, 10.00@11.00; blackberries, 10.00; huckleberries, lb., 12½@15.
Figs, double layer, Bl. .....1.00@1.25
White 75
Grapes—Per lug, 1.50@1.75; fy. Muscat, 2.75@3.00; ch., 2.00@2.25; Cornichon, 1.75@2.00; cr., Isabella, 1.50@1.75; others, 1.00@1.25.
Melons — Casabas, 1.50@2.00; Cantaloupes, 1.00@1.50; Honeydew, 1.50@2.00.
Olives, lb.: Queen, 13@14; small, 8@10.
Pears, Bartlett, wrapped bx....2.25@2.50
Beurre Hardy, lug 1.50
Kieffer, bx. .....2.25@2.50
Persimmons, bx. .....1.00@1.25
Pomegranates, ½ orange bx.....1.25@1.50
Pineapples, doz. .....4.50@5.00

TREES

Peach, Apricot, Almond, Plum, Prune, Pear, Apple, Cherry, Olive, Fig, Orange, Lemon, etc., etc.

More than a million per year for California Planters

Est. 1888 **Kirkman Nurseries** Inc. $100,000

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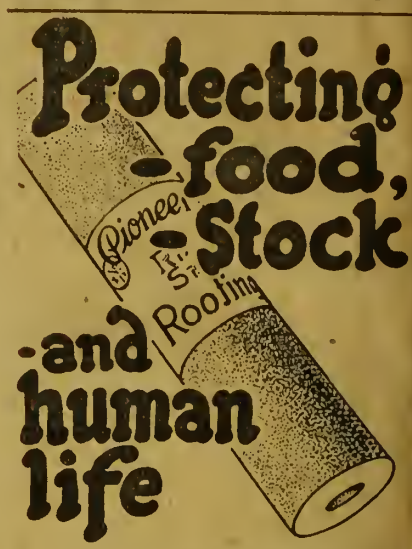
Unavoidably Postponed
The Second Sale of
Shorthorns
Watch for announcement of the new date later
California Shorthorn Breeders Assn.
320 Sharon Building San Francisco



In these days of conservation it is highly important that all buildings be weather proof.

Losses that are irreplaceable may easily occur from defective roofs.

Repairs to buildings should be made while it is possible before costs mount too high.

This old reliable brand of ready roofing has been used in California since 1888. Thousands of farmers, manufacturers and merchants—as well as home lovers everywhere — use it because of its intrinsic worth.

—because of its long life and reliability,

—because of its comparative low cost.

There is a dealer near you who handles Pioneer Roofing and can supply your orders. If you experience any difficulty in securing it—

—write us for samples and information.

Pioneer Paper Co.
Manufacturers
247-251 S. Los Angeles St.
LOS ANGELES

TEAGUE QUALITY
CITRUS TREES
Orange, Lemon, Pomelo and Lime, bud selected (pedigreed) trees, subject to immediate delivery. Correspondence invited and prices cheerfully quoted.
Founded in 1889
R. M. Teague Citrus Nurseries
SAN DIMAS, CALIFORNIA

CITRUS

Quinces, lug .....1.00@1.25
Lemons, bx., fy., 8.50@9.00; oranges, 11.00; grapefruit, 6.50@7.00.

DRIED FRUITS

Raisins: Associated prices 1918 are:
Muscats: Packages seeded, fancy, 36-16s, 9.625; fancy, 48-12s, 7.75; choice, 36-16s, 9.125; choice, 48-12s, 7.375. Bulk seeded: 25-lb. Bakers, 8.00; 25-lb. fancy, 8.85.

Thompson Seedless; packages recleaned, 48-16s to case, 9.90; bulk, recleaned, 36-12s to case, 8.00; package, recleaned, 25-lb. boxes, 9.25. Sulphur bleached — northern stock: Bulk, 25-lb. boxes, choice, 10¼; bulk, 25-lb. boxes, fancy, 10¾; bulk, 25-lb. boxes, extra fancy, 11¼. Soda dipped — northern stock — Bulk, 25-lb. boxes, 10.

Loose: 1-crown, 25 lb. boxes, 8½; 2-crown, 25 lb. boxes, 7½; 3-crown, 25 lb. boxes, 8; 4-crown, 25 lb. boxes, 8¾.

Layers: 3-crown, 20 lb. boxes, 1.85; 3-crown, 20 1-lb. trays to box, 2.00; 4-crown, 20 lb. boxes, 2.10; 6-crown, 20 lb. boxes, 2.95; 3-crown, 10 lb. boxes, 1.05; 4-crown, 10 lb. boxes, 1.20; 6-crown, 10 lb. boxes, 1.65; 3-crown, 5 lb. boxes, .65; 4-crown, 5 lb. boxes, .70; 6-crown, 5 lb. boxes, .90.

Sun-Maid clusters, 20 1-lb. cartons to box, 2.35.

Imperials, 4 5-lb. cartons to box, 3.40.

Vineyard run, 50 lb. boxes, 3.90; 100 lb. boxes, 7.50.

Sultanas. Packages, recleaned, 48-16s to case, 9.65; bulk, recleaned, 25-lb. boxes, 9.00.

Peaches — California Peach Growers quotes opening prices for 1918 crop f. o. b. factories California. Prices guaranteed to December 31.

Bulk basis and boxes unfaced 1 and 2 cents more.

	Practically Peeled	Yellows — Muirs (Old style)	(Old style)
Standard	12⅞c	11¼c	11⅝c
Choice	13⅜c	11¾c	11⅞c
Fancy	14⅜c	12¼c	12⅞c
Ex. Fancy	15½c	13¼c	14c
Slabs		10¼c	

Prunes and Apricots. The Prune and Apricot Growers' Association have named following prices on apricots:

Standards 9½
Choice 13
Extra Choice 14½
Fancy 16
Extra Fancy 17½
Extra Moorparks 19
Slabs 11

Cash on delivery price on all grades will be 8 cents with the exception of standards and slabs on which it will be cents.

Prunes: The government will take all the 50-60; 60-70; 70-80 sizes. The quotations sent to the trade last night are as follows:

The bulk prices will be:

Sizes:	Price per lb.
30-30	17
30-40	10¾
30-50	10
30-60	9
30-70	9
30-80	8¾
30-90	8¼
30-100	7¾
90-120	4¾
Above 120	4¼

One cent per pound, and one and one-fourth cents per pound will be added for 24 and 25-lb. boxes.

NUTS

The Almond Growers' Association has established opening prices as follows per pound:

Nonp. 27½
I.X.L. 25½
Ne Plus 24½
Drake 20

Outside dealers have named prices above these quotations and it is understood association stock is practically closed out and prices withdrawn.

Walnuts: Net prices have been named by the California Walnut Growers Association:

No. 1 Softshell 28
No. 2 Softshell 25
Jumbo 30
Fancy Budded 31½
Golden Gate Budded 29

Franquettes, Eurekas and other fancy varieties sold on sample. No. 1 Softshell guaranteed 88 per cent good; Fancy Budded, 90 per cent. In case of worms or damage by ants not more than five per cent.

RICE

California Rice—1917 crop, nominal: 8 crop, when harvested per 100 lbs.: Paddy rice, 4.32; clean fy. Japan, 7½ lb.; Japan, 7 3-8 lb.; fy. second head, 6 7-8 screenings, 5 5-8; lb.; brewers, 5¼ lb.; rice polish, $50 ton, car lots; rice bran, ton, car lots.

BEANS

Jobbers' prices, cwt., recleaned:

Limas ..... 11.75@12.00
Pinkyous ..... 7.50@7.75
Small Whites 10.00
Large Whites 9.00
Mexican Reds ..... 7.50@7.90
Blackeyes 6.40
Cranks 6.90
Red Kidney ..... Nominal
Cranberry ..... Nominal
Garbanzos ..... 7.00@7.50

HONEY

Jobbers' prices:

White extracted ..... 20@22
Light amber extracted ..... 17@20
Amber extracted 16
White comb, cs. ..... 4.50@6.00
Light amber comb, cs. ..... 3.50@4.00
Beeswax ..... 32@34

HAY

Under date of October 26, Scott, Magner & Miller says:

Receipts past week 852 tons. The majority of the receipts still continue to be hay that was exposed to the September rains. Some of this hay is only slightly damaged but the majority of it has been materially damaged and is sold for stock feed, some as low as $6.00 to $7.00 per ton basis. To this, of course, cartage charges, etc., are added. Owing to the epidemic of influenza very little business is being done. There is some demand for fancy grades of wheat and oat hay. We look for this influx of damaged hay to be over shortly. The north winds of the latter part of the week have injured the feed considerably. At the same time they have been of some benefit in curing the late crops of alfalfa which are being harvested.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.

Fancy Wheat Hay (light five wire bales) .....28.00@30.00
No. 1 Wheat or Wheat and Oat Hay .....26.00@28.00
No. 2 Wheat or Wheat and Oat Hay .....20.00@24.00
Choice Tame Oat Hay .....25.00@27.50
Other Tame Oat Hay .....20.00@23.00
Wild Oat Hay .....20.00@22.00
Barley Hay .....20.00@22.00
Alfalfa .....18.00@22.00
Stock Hay (in order) .....18.00@21.00
No. 1 Barley straw, bale.....50@80
Damaged Hay (all kinds), according to condition.
Other Tame Oat Hay .....22.00@24.00
Wild Oat Hay .....22.00@24.00
Barley Hay .....22.00@24.00
Alfalfa .....22.00@25.00
Stock Hay .....18.00@21.00
No. 1 Barley Straw, bale.....50@80
Damaged Hay (all kinds).....Nominal

SEEDS

Flax, lb. .....8@8½
Hemp .....Nominal
Millet .....5@5½
Rape .....2½@5

Citrus Fruit Market

Los Angeles, Oct. 29, 1918.

Navels are being offered at the auction and commanding satisfactory opening prices. There are yet a few Valencias to go forward though orchards are practically cleaned up. There are still many cars in transit and on sidings. Florida is already shipping her early fruit, her grapefruit being of good quality.

The lemon market has been stiffened and prices are now approaching long prices which have been given for Valencias.

Shipments

Complete figures as to shipments for year ending November 1 will be given next week. Total for this year including October 28 and since November 1, 1917: Southern California; oranges 15,332 cars, lemons 5109, total 20,441. To same date last season, oranges 4417, lemons 7729, total 48,146. Central California this season, oranges 2536, lemons 115, total 2651. Last season to same date; oranges 4665, lemons 164, total 4829. Northern California; oranges 203, last year same date 845.

AT THE AUCTIONS

October 23

New York: 11 oranges, 2 lem. Val. 9.30-16.50, Nav. 6.05-7.25, lem. 9.75-11.00.
Philadelphia: 3 oranges, 1 lem. Val. 6.00-12.90, lem. 7.90-9.70.
Boston: 2 oranges, 1 lem. Val. 7.90-9.55, lem. 8.70-8.85.
St. Louis: 1 orange, 1 lem. Lem. 9.25-10.65.

October 24

New York: 24 oranges, 4 lem. Val. 7.95-16.75, lem. 11.15-11.70.
Philadelphia: 3 oranges, 1 lem. Val. 5.70-13.85, lem. 6.55-8.50.

October 25

New York: 8 oranges, 2 lem. Val. 6.00-12.90, lem. 6.00-12.40.

October 28

New York: 13 oranges, 3 lem. Val. 6.00-13.95. Nav. 6.00-6.85, lem. 8.70-11.60.
Boston: 2 oranges, 1 lem. Val. 5.90-10.25, Nav. 5.90, lem. 9.00-10.05.
Cincinnati: 1 orange, 1 lem. Val. 8.50-10.40, lem, 11.10-12.45.
St. Louis: 1 orange, 1 lem. Val. 11.60-12.45, lem. 8.25-9.50.

October 29

New York: 6 oranges, 1 lem. Val. 7.10-14.05, Nav. 8.60, lem. 11.00-11.65.
Philadelphia: 3 oranges. Val. 6.85-9.75.
Pittsburg: 1 orange. Val. 10.60-14.15.

PARTIAL LIST CALIFORNIA FRUIT AND VEGETABLE SHIPMENTS

From post card reports to the Los Angeles branch of the bureau of markets, report is made of the following shipment of cars of products from California for the week ending October 28: Apples, 189; cabbage, 5; carrots, 4; casabas, 9; cauliflower, 1; dried apples, 4; dried apricots, 13; dried beans, 124; dried figs, 10; dried peaches, 20; dried pears, 6; dried peas, 1; dried prunes, 19; grapes, 1501; lettuce, 8; mixed fruit, 3; mixed vegetables, 15; mixed fruit and vegetables, 30; mixed dried fruit, 41; olives to canners, 3; onions, 112; peaches, 1; pears, 38; peppers, 3; persimmons, 1; pomegranates, 3; potatoes, 176; raisins, 168; sweet potatoes, 10; tomatoes, 86; watermelons, 1; Arizona potatoes, 10.

F. H. POSS COMPANY OPENS LOS ANGELES OFFICE

There has been such a demand for Avery tractors in Southern California that the F. H. Poss Company has found it necessary to open offices in this section.

Walter Rainey, who has been made manager for Southern California, has spent almost a life time with tractors. He knows tractors as most men know their own names. He knows the farmers' needs and the uses that he can make of tractors. Mr. Rainey has been connected with the tractor department of the Avery Company for the past 12 years, and the farmers, ranchers and orchardists of Southern California will certainly be benefited by his experience. The headquarters in Los Angeles have been established at 237 South Los Angeles Street.

Note What It Does

How Special TrackPULL Tractor Works Orchards, Vineyards

Tractors are too important to buy without first getting all the reasons to show why some are better than others for your particular kind of work.

The Bean TrackPULL Book tells plainly why you need a Bean Tractor if you want orchard and vineyard work. Worth its weight in gold because it posts you on vital qualities in such a tractor. You know what your tractor must do. Send for catalogs of all tractor makers and compare with Bean TrackPULL Book. Then decide on your tractor.

The Bean TrackPULL operates through single track which does all pulling and steering. Full power on turns same as on straight-away. Makes no difference how far off center you hitch —pulls just the same. Works close to trees and vines. Pulls, "gees," "haws," and backs just like team; 12 year-old boys can handle.

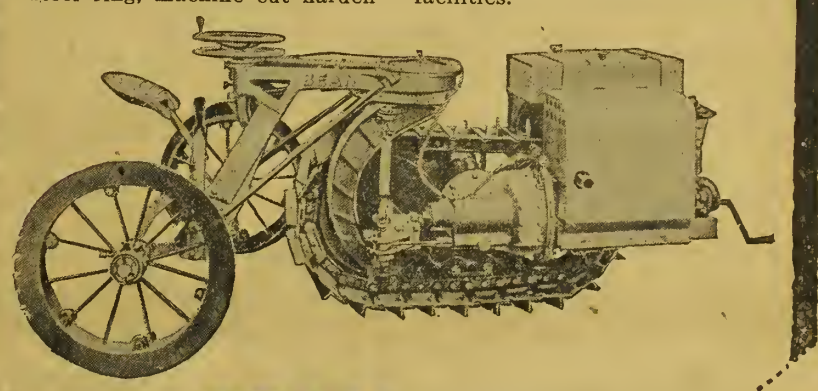
Made by manufacturers of orchard machinery for 34 years. All their specialized experience built into it.

Advanced improvements in Motor, Track Rollers, Drive Sprocket, Bearings and Rear Wheels make the Bean the most efficient orchard and vineyard machine ever manufactured.

Get invaluable Bean TrackPULL Book Now — send the coupon before you forget it. Save money. Learn name of nearest agent who can show machine.

See These Valuable Improvements Which Mean Increased Reliability

1. Motor — Improved oiling system. Improved carburetor control. Governor equipment if desired.
2. Track Rollers — Provided with hardened steel thrust bearings.
3. Drive Sprocket — Solid steel ring, machine cut hardened and heat treated assures long service.
4. Bearings — Provided with improved dust protected greasing facilities.
5. Rear Wheels — Provided with dust cap, wear resisting bushings and improved greasing facilities.



BEAN TrackPULL Tractor
6 H. P. at Drawbar
With
Patented Front-Drive

MAIL THE COUPON NOW

Bean Spray Pump Co.
222 West Julian St. San Jose, Cal.
131 N. Los Angeles St., Dept. D-11, Los Angeles Cal

Send me catalog and full information without obligation on my part.

Name.....
Street.....
City.....
County..... State.....
Number of acres..... Kind of crops grown.....

—here's something that will wake 'em up!

It is easy enough to produce eggs in the spring; but in the fall and winter, when prices are highest—ah! that's a different story.

And yet—hens are pretty much like the rest of us: they have to be fed into action. They won't stir until you stir them up; and the biggest single help you have is Surelay.

No matter what results you may have secured heretofore—no matter how disappointed in the egg foods you may have tried—you owe it to yourself, your flock, and your profits, to use Surelay.

Surelay is a perfect balanced ration—nothing less! Its function is to give your hens the exact ingredients they need to bring about the greatest egg-production in the most natural way. Now then—

The elements of an egg are derived from so many sources that no single food will answer the purpose. This is why Surelay contains sixteen separate ingredients, blended and mixed more skillfully than can possibly be done by hand. Another thing—Surelay is always the same. Each sack must measure up to a definite standard of uniformity—or else it cannot be Surelay.

The formula that has made Surelay a prime favorite among successful poultrymen is no secret. You have a right to know what you are feeding your flock; and the manufacturers of Surelay recognize this by printing, on the back of each sack, its exact analysis.

Remember this: when it comes to a uniform, high-grade feed that will rouse your flock into a sense of duty—that will prod your hens into profit-producing—Surelay rings the bell and taps the gong every time. That's why poultrymen who know are quite frank to acknowledge that "Surelay is sure some stem-winder!"

[Be sure to look in your Surelay sack for the Certificate that entitles you to our 1919 Surelay Egg Record and Calendar]

STOCK AND POULTRY FOOD DEPARTMENT

SPERRY FLOUR CO.

STOCKTON, CALIFORNIA

Stock and Poultry Food Department,
SPERRY FLOUR CO.,
152 Weber Ave., Stockton, California.

Gentlemen:

If your handbook—"Makes Hens Happy"—will help me increase my poultry profits, I want to have it. So—please send me a copy today, without charge

Name .....

Address .....

.....

SURELAY

"A Sperry Product"

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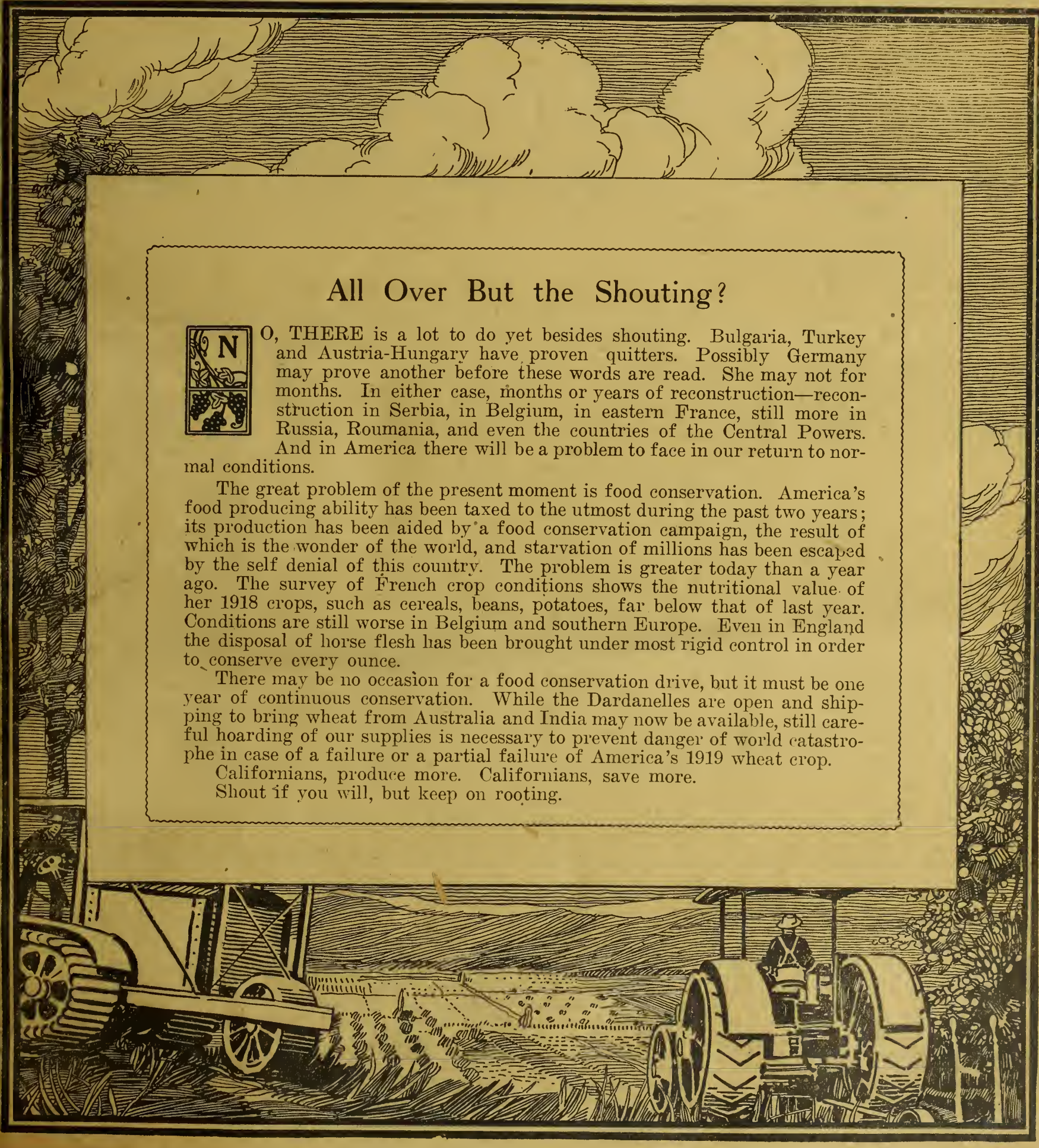
NOV 12 1918

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — November 9, 1918 — No. 19



All Over But the Shouting?

NO, THERE is a lot to do yet besides shouting. Bulgaria, Turkey and Austria-Hungary have proven quitters. Possibly Germany may prove another before these words are read. She may not for months. In either case, months or years of reconstruction—reconstruction in Serbia, in Belgium, in eastern France, still more in Russia, Roumania, and even the countries of the Central Powers. And in America there will be a problem to face in our return to normal conditions.

The great problem of the present moment is food conservation. America's food producing ability has been taxed to the utmost during the past two years; its production has been aided by a food conservation campaign, the result of which is the wonder of the world, and starvation of millions has been escaped by the self denial of this country. The problem is greater today than a year ago. The survey of French crop conditions shows the nutritional value of her 1918 crops, such as cereals, beans, potatoes, far below that of last year. Conditions are still worse in Belgium and southern Europe. Even in England the disposal of horse flesh has been brought under most rigid control in order to conserve every ounce.

There may be no occasion for a food conservation drive, but it must be one year of continuous conservation. While the Dardanelles are open and shipping to bring wheat from Australia and India may now be available, still careful hoarding of our supplies is necessary to prevent danger of world catastrophe in case of a failure or a partial failure of America's 1919 wheat crop.

Californians, produce more. Californians, save more.

Shout if you will, but keep on rooting.

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914.
Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916.

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Saturday, Nov. 9, 1918

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

There is nothing pictorial on the cover page of this issue, but there is a word of appeal to Cultivator readers, not from the Cultivator but from people who are suffering and whose little ones go to bed actually hungry. Californians have been denying themselves and answering most nobly. The end is not yet.

LIBERTY FAIR

There are still several herds of Angus, Shorthorns, Herefords, and other stock at Exposition Park, Los Angeles, waiting for the "flu", which seems inclined to wait for the kaiser to capitulate before it makes its unconditional surrender. The management still insists that there will be a great fair, and there surely will be if the "flu" ever lets up. It is now nearly 30 days since the quarantine was declared, and at that moment the fair was practically ready to open to the public.

FIRE PREVENTION

California has talked much of the work of the forest ranger and of all the people in preserving our watersheds and our great timber lands. The talk has resulted in much real accomplishment. Fire Prevention Day came, and where schools were in session instruction was given in greater care in protecting not only our forests and our fields but the buildings on our farms and in our cities. In some schools there were readings of proclamations and statements by state and national officials, talks by firemen, essays by pupils on fire prevention.

The loss in the United States from the 1500 fires which occur every 24 hours is appalling. This is a fire every minute day and night. The great majority of these fires are from pure carelessness. Note that for every $2.10 loss in the United States the loss in France is 49 cents; in England, 35; Germany, 28; Italy and Austria, 25; Switzerland, 15; Holland, 11. It's time we reformed.

UNITED WAR WORK

The big campaign for the United War Work begins on next Monday. It will end on the following Monday, November 18. That week means success to the work of the Y. M. C. A. and other organizations which are responsible for many of the comforts, even necessities, which make our boys at the front more fit and help more than is generally appreciated in giving the proper punch to American and Allied operations. Americans are asked to contribute during that eight day campaign $170,500,000. It is estimated that the farmers will contribute 35 per cent of this amount.

SUNDAY WORK

A conference of churches of Indiana in which many rural ministers participated recently made unanimous ruling, or expression of its opinion, that so long as the worst enemy of civilzation menaces that civilization and the liberties of all it is entirely right and proper and even necessary that Sunday work should be performed where food can be produced in doing it. "Every church in Amerlca is fighting for its existence, as is every other component of civilization. If Sunday work saves crops it will help overthrow the bestial menace and becomes veritably a most chuchly work."

MACHINE FIGHTING

America is planning to have three and a half or four million men in France or in Germany by midsummer of 1919, and the war department asserts that they will be equipped with fighting machinery as no army in the world ever was. England and France sent almost unnumbered thousands to their deaths in a brave attempt to stem the Hun tide. They learned some lessons which they have passed on to America, and the slogan now is, "Let machinery do it." Therein is the success of the recent drive. Months of time have been given by manufacturing centers of America, England and France, and tanks, flying machines and guns of all callbers have been sacrificed rather than human lives.

This simply as a bit of encouragement for the farmer who finds difficulty in securing labor saving machinery and implements.

O. H. STEVENS

One of Callfornia's finest characters, O. H. Stevens, president of the Traction Engine and Implement Dealers' Association of Southern Callfornla, has passed. Mr. Stevens was a natlve of the state of Washington, but was for nearly a dozen years with the Holt Manufacturing Company of this state and for that company established the Los Angeles branch, being in charge of it for some years. The success of the Southern Callfornia tractor demonstrations has been largely due to his indefatigable work. He leaves a wife and two little ones, a brother in the trenches, and other members of his family at Dayton, Washington. He was only 32 years of age.

LESS JUNK

Clean up the junk, especially the old iron, copper and other valuables lying loose around the barn. There never was a time when it commanded so high a price as the present; it is needed in our industries, and the money is needed to equip the farm with something useful. If it is not turn it over to the Red Cross or some other organization which will attend to its utilization. Beside the iron, copper and brass which may be gathered in, there are old automobile tires, broken furniture, and we may even mention some of the old clothing hanging often in the woodshed which would serve an admirable purpose in the hands of European relief socleties. If too far gone for use as clothing it may at least make carpet rags.

THE CORN-PORK RATIO

We rather imagine that in the future the food adminlstration will "view with suspicion" any suggestion that the hog market can be stabilized on a ratio of corn to pork. Certainly the producer will!

As a matter of fact there has been plenty of evidence during the past year that would indicate that the food administration felt that they had picked up a hot brick when they adopted the thirteen to one ratio.

The economics of agricultural costs is a subject that is about as wide and deep as the ocean, and not nearly so well charted, and those adventurous souls who strike out boldly on a search for the land of "Production Costs" are very likely to hit an unseen rock.

The reason given for discarding the thirteen to one ratio was that the possibility of an early peace and therefore the releasing of large quantities of corn in South America and Africa, caused a break in the corn market that would automatically carry the hog market to a point below the minimum of $15.50.

The failure of the ratio to operate because factors beyond the apparent control of the food administration developed, prompts the question as to whether any arbitrary market can be arranged. Will not any market ine-

And yet it appears that sooner or vitably get away from the arranged basis just as soon as conditions do not coincide with it?
later the marketing of agricultural production must be based on production costs.

If markets are to be stabilized it would seem that the nearer the starting point touched the raw material the better the working basis.

LIBERTY—INTERNATIONAL

Just as we go to press word comes that the California International Live Stock Exposition will open at San Francisco, Saturday, November 16.

No definite statement has been issued regarding the opening of the Liberty Fair to be held at Exposition Park, Los Angeles, but it is thought that the opening date will be early next week.

The stage has been set for these two great shows, and the enforced postponement, regretted by all, has been taken advantage of by the management of each show to add the finishing touches.

These shows presage much for the live stock and agricultural development of California, and each show has a message to deliver that will interest every man and woman in the state who believes in better agriculture.

This Week's War Notes

Bulgaria quits.

Turkey quits.

Austria-Hungary quits.

Some quitters. Germany, next.

The early abdication of Emperor Charles of Austria and his retirement to Switzerland is anticipated.

The Ukrainian national council announces that it has taken over the administration of eastern Gallcia.

The Polish army, under the supreme authority of the Polish National Commlttee, has been recognized by the government of the United States as autonomous and a co-belligerent.

There is no slackening in the movement of American forces, and the draft calls are being issued as anticipated. The largest single call to be issued is that for November 11, which is for nearly 300,000 men.

The eyes of the world have been centered on western and southern Europe so that there has been little interest in Russia and Siberia. It is understood the lines of the Allies have been strengthened, and there can be no question that the fall of the Central Empires will result in complete collapse of the Reds.

At three o'clock Monday afternoon, November 4, Austria fired her last gun and unconditionally surrendered. Her navy is to be turned over to the Allies, as are all railway transportation lines. The Allies are to have free access over her territory, and she is now endeavoring to save a semblance of government organization and to correct her own internal affairs. Before surrender the Italian armies captured over 300,000 Austrian soldiers and 5000 guns.

It is a great satisfaction to all the Allies that the conference at Versailles has resulted in entirely harmonious action. World history has never been made so rapidly as during the past few days, and while peace is much nearer there are yet problems to solve, but the action at Versailles has given the lie to the pessimistic claim sometimes made that when peace is approached the Allies will also approach the danger line and dissensions will complicate final peace arrangements.

Turkey has surrendered; the Dardanelles are opened; the fleets of the Allies are chasing the Germans around the Black Sea. General Townsend and his troops, who were prisoners in Turkey, have been returned. Constantinople and all fortifications along the Dardanelles are now occupied by Allied troops. The conditions in Vienna seem to be practically anarchy. The royal court has ended, and it is announced that even Germany has recognized the Independence of the Czecho-Slovak state.

The Allies have continued driving at every point the Germans toward the Rhine. The Americans have done remarkably fine work in the Verdun sector and are now approaching Sedan. Some Austrian prisoners have been captured, but it is understood they are being withdrawn as rapidly as possible since Austria's surrender. The number of prisoners and guns is not announced, perhaps not even counted, but it is known there is a continuous stream and it has become embarrassing to know what to do with the great number of prisoner.

The armistice terms, which are assumed to mean practically unconditional surrender, have been delivered to the Germans. These terms were not announced in time to be given here as we go to press one day earlier than usual. It has been stated, however, that the terms are very similar to those granted Austria-Hungary. Our government has announced, however, that the terms were unanimously agreed upon by all the Allies. It is generally assumed that the boundary lines in Europe will undergo very great changes, and these will not be along the line of "frontier corrections" so often referred to by Germany early in the war.

What Causes June Drop?

NOTE that the title above is a question, and no answer to that question can be given which will be entirely satisfactory to the citrus grower and to the investigator of citrus problems. Does the usual "hot wave" of June have to answer for all of the usual June drop, or is a fungus which we call Alternaria the determining factor, or has the orchardist irrigated too much or too little, or perhaps the tree has not been pruned properly, or is there some physical sickness or chemical lack in the soil which is responsible for this most perplexing, or even exasperating, fault of citrus trees, more especially Washington Navel trees?

These are only some of the questions which the citrus grower is endeavoring to solve, and many of the other problems may in a measure have to do with this one of the June drop. While the Cultivator makes no promise of a solution of this question, it is now presenting opportunity for a most interesting discussion by arranging with a California agricultural chemist and one who has already made some years' study of these and allied questions, whose opinion is at present that while the soil may not contain a conclusive answer it may have suggestions which will aid in answering "Why this June drop?"

In order that the best information may be had on the subject we are going to open our columns to a discussion, and the first step we ask the grower himself to take. This step calls for no extended observations or keeping of records other than that where the grower has an orchard or a portion of an orchard which has shown serious drop, regardless of whether it is located in the warmer valleys or in the coast sections, we ask that he give us a sample of his soil, sample to be taken from the sides of a hole which shall be at least three feet in depth, and so taken as to give a fair proportion of surface and bottom soil and all between. Soil to the amount of at least one pound should be supplied and sent to the office of the California Cultivator.

When these soil samples are received with full particulars as to the condition of the orchard, record will be made and kept in this office, and the soils from the dropping and non-dropping orchards will be turned over to the chemist, who will make examinations with no knowledge of their character other than that the package containing the sample has a number which corresponds with a number in the records held in this office.

The results of this analysis will be later given to the orchardist as compensation for his effort. It will not be a complete soil analysis but will be sufficient to prove of value to the orchardist.

Then from other growers, or even the same grower—if a portion of his orchard does not show drop—we want soil samples taken in identically the same way, to be analyzed in the same way as the soils from the groves which do not hold their fruit.

It may be readily seen that the point to be determined in this soil examination is how serious an affect the soil has on this drop.

Lest there be a greater number of these samples sent than it would be possible for our chemist to handle we ask for samples from six different orchards which have shown serious drop and the same number from non-dropping orchards and we ask citrus growers who have typical orchards to drop postcard to this office with application for the making of the soil analysis and not to send soil samples until notified.

..... Nov. ..... 1918.

To California Cultivator,
115½ N. Broadway,
Los Angeles, California.

I would like to submit soil for chemical determination. I have..... acres of navels which have.....(not) dropped seriously in 1917 and 1918 as a result of the usual "June drop". (Or if a portion of the orchard has dropped seriously and a portion not please so indicate.) In my section are certain trees the behavior of which has been contrary to that of mine. These trees are owned by

Name	Address
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

Please send instructions as to taking soil sample.

Signature .....

Address .....

Fertilizing Citrus Orchards

Written for California Cultivator by R. R. Snowden

THE citrus grower's experiences, often puzzling and sometimes contradictory, are easily understood when we have sufficient relevant data. Here is a recent case that proves this statement.

Mr. A., failing to get a cover crop, last winter applied 15 tons stable manure per acre to his orange grove, having previously put on one ton ground lime carbonate. With the fine tillage and moisture conditions given this grove any grower would say this was good practice and should have given satisfactory results. Yet Mr. A. writes: "This, one of my finest groves, has practically made no new growth whatever." The question arises at once, "Why, with 150 pounds of nitrogen per acre in the manure, and the lime to stimulate bacterial activity, have the trees made no new growth?" The analysis of the soil makes the answer perfectly clear to the agricultural chemist.

Here is the partial analysis: Lime carbonate, 2.03 per cent (a high per cent); nitrogen, 0.041 per cent; sulphur (in organic combination), adequate; sulphates, inadequate.

The manure was rich but fresh, and had an adverse influence on the process of oxidation, hence the sulphur present could not be converted into sulphate. There being practically no lime sulphate to fix the ammonia as fast as the ammonifying bacteria produced it, the latter was dissipated in the atmosphere and lost, and the trees thus were simply nitrogen starved in spite of its large addition to the soil. Under usual conditions the sulphur would have been oxidized to sulphuric acid, and this by reaction with the lime corbonate present would have provided the necessary lime sulphate to fix the ammonia as sulphate and the nitrifying bacteria would then have had their chance to produce nitrates, which are practically the only form of nitrogen available for plant nutrition.

Although the almost entire absence of fruit in this grove now, while two years ago it produced over 600 boxes per acre, cannot be used here for comparison purposes for the reason that other factors have of late dominated production adversely, yet it is interesting to know that during the season of high production mentioned each tree received 3.8 ounces nitrogen in nitrate form, which rendered them to some extent independent of the organic soil nitrogen. During that season the condition of the trees also advanced from "good" to "very good."

Conclusions derived from the above experiences:

Either conditions favorable to the nitrification of organic nitrogen must be secured, or else nitrates must be added. Chief of them is the promotion of oxidation.

Intermediate between nitrification and the conversion of the nitrogen into ammonia is the fixation of the latter, which must be provided for.

It is unprofitable to add lime carbonate if this is already plentiful in the soil. So also of all plant nutritives.

Manure will fail of its duty when a condition is present inimical to its assimilation either with the soil or by the plants.

Much money is wasted by even the most astute ranchers by neglect of these self-evident rules.

CONVENTIONS POSTPONED

State Commissioner of Horticulture Hecke, announces with regret that the spread of Spanish influenza has made necessary the postponement of the 51st State Fruit Growers and Farmers' Convention, the Annual Convention of the State Association of County Horticultural Commissioners, the Interstate Plant Quarantine Conference, and the Vegetable Standardization Conference. Max J. Crow, president of the California Association of Nurserymen, has informed Mr. Hecke that it has been decided to postpone the annual convention of that association. All these conventions were to have been held at Riverside during the week of November 11 to 16. The decision was made after consultation with the health officers of the state and of Riverside County, and in justice to the delegates expected to attend the Interstate Plant Quarantine Conference from all the Western states, and some from Florida, Washington, D. C., Dominion of Canada and the Hawaiian Islands.

It goes without saying that the conventions are merely postponed until control of the influenza situation has been effected, and are contemplated for not later than the spring of 1919.

NOVEMBER SCHEDULE, GLENN COUNTY FARM BUREAU

Glenn County national farm loan meeting, November 9; Codora, 11; Orland, 13; Plaza, 15; Willows, 18; Chrome, 20; Larkin, 22; directors and home department meeting, 10 a. m., 23; Elk Creek, 2 p. m., 27; Grapevine, 8 p. m., 27.

The monthly farm bureau directors meeting will be held at the Federal Building, Willows, at 10 a. m. on Saturday, November 23. On same date and hour, the women's farm home department meeting will be held at the City Hall in Willows.

Agricultural News Notes of the Pacific Coast

Northern California

Olive picking is in full swing at Fairoaks, Sacramento County.

Anthrax conditions are improving in nearly all sections of the valley.

California's fresh deciduous fruit shipments aggregate about 25,000 cars.

Ascolano and other large olives are selling in Butte County at from $300 to $350 per ton.

The Globe Milling Company at Woodland is the first to make flour from 1918 harvested rice.

"Slackers" in San Francisco who failed to wear "flu" masks are arrested on charges of "disturbing the peace".

Three hundred and fifty convicts of the state penitentiary at San Quentin are members of the San Quentin Agricultural Club.

The fish and game commission contemplates the installation of a fish hatchery on Chico Creek. Both trout and salmon will be hatched.

The valley has been given a change in weather, exceptionally warm weather being followed by a norther which was not exactly welcome.

Cattlemen about Folsom are bringing stock down from the ranges. Early snows in the mountains have melted and the feed is plentiful.

Butte County olive growers are concerned over labor shortage. Temporary relief is being had from high school boys who are out on influenza vacation.

The rice situation is very satisfactory in the Sacramento Valley and the recent warmer and more drying weather has proven very satisfactory to the growers.

California Wine Company is shipping immense quantities of wine to all parts of the United States. It is asserted that people are preparing for a long "dry" spell.

Tribble Brothers of Sacramento County will market this year the first commercial crop of pistachio nuts in the United States. They have about 500 trees in the orchard.

Tehama County cattlemen have taken up the matter of quarantine of counties to the south because of anthrax. It was decided, however, not to lay such quarantine for the time being.

Farmerettes who aided in the grape harvest at Lodi, San Joaquin County, have offered to remain through the winter if labor can be secured in the Lodi section. They are now engaged in husking corn.

The Pacific Coast Packer estimates the output of oranges from Northern California citrus districts at 400 carloads, of which 250 cars will be shipped from Butte County, 100 from Sacramento, 35 from Placer.

An irrigation system to cost about $200,000 and which will impound about 30,000 acre feet is contemplated for certain mountain valleys of Mono County. It is planned to distribute the waters to some 100,000 acres of land.

Directors of the Nevada County farm bureau have changed their meetings to night meetings instead of all day meetings and each farm center not represented will be fined $5.00. This because of the importance of war work to be undertaken.

Central California

Lemon Cove and Lindsay are picking grapefruit.

Navel oranges are coloring very rapidly in Tulare County orchards.

According to the present game law no wild ducks may be offered for sale.

The Visalia cannery is calling for more women canners to handle grapes.

The Santa Clara County supervisors have ordered construction of several concrete bridges.

Erection of a cotton gin has been started by the California Products Company at Bakersfield.

No highway commissioner has been appointed to fill the place of Henry Widenman, recently deceased.

Some excellent broomcorn has been grown on the ranch of J. J. Ralls near Button Willow in Kern County.

The Tulare County Lemon and Grapefruit Association will ship about 100 carloads of lemons this year.

The cotton gin at Fresno has received its first supply of Fresno has received its first supply of Fresno grown cotton.

A. S. Good of Bakersfield has been elected president of the Kern County branch of the California Cattlemen's Association.

Oakdale, Stanislaus County, began cutting rice the middle of October. There are in that district about 1000 acres to be harvested.

Peace Valley in the Coast Range some 30 miles west of Coalinga is said to be one glow of gold from California poppies encouraged by the early rains.

President Hansen of the San Joaquin Milk Producers Association reports plans to extend marketing activities of the cooperative marketing association.

Cattlemen of the fourth zone of the State Cattlemen's Association met at Fresno Saturday, November 2, to consider constitution and bylaws submitted at the Davis convention.

Tulare County citrus growers are protesting against the order of Los Angeles County horticultural commissioner requiring fumigation of oranges with hydrocyanic acid before admission to that county.

The California Associated Raisin Company asks all growers to cull on trays in order to maintain grades as high as possible. Close culling means valuable feed kept at home and higher price for marketable stock.

Santa Cruz County apples are shipping rapidly, and the crop is proving of a better grade than was anticipated. Both growers and packers are securing good return. Shipments have now passed the 1000 car mark.

Commissioner Collins of Tulare County reports that citrus thrips do not exist upon the citrus fruit of Tulare County at this season, though the fruit is sometimes infested with a harmless species of the thrips family.

Central California navel shippers announce strict adherence to standardization rules for all shipments this year. Testing stations will be maintained under direction of the state horticultural commission. Eight to ten sugar ratio and substantial color is regarded as essential.

Southern California

The Banning district has a very large almond crop.

Arizona is shipping large quantities of feeder cattle into the Imperial Valley.

The Holly sugar factory in Orange County is crippled because of labor shortage.

Orange County poultry yards are being afflicted with a serious attack of chicken pox.

Imperial Valley has 12,000 colonies of bees and produces about 80,000 pounds of honey.

Lamanda Park, Los Angeles County, grape growers are getting $30 a ton for their Missions.

The cotton crop of California and Arizona with its by-products will this season total $16,000,000.

The seedless apple is bobbing up again, this time Riverside claiming to have "developed" a perfect specimen.

The discovery of the syrup possibilities of the grape is characterized as the dawning of a new day for the grape industry.

Imperial Valley is making appeal for the establishment of a viticultural station where desert grape production may be studied.

From Wintersburg, Orange County, comes a report that practically all the women are busy handpicking beans, thus releasing men for heavier labor.

Wineries in the Ontario district are converting their plants to the manufacture of grape syrup. Machinery has already been installed at Guasti, Cucamonga and Rochester.

More than 100 Redlands high school girls are working in the Yucaipa apple cannery. Their work has enabled the plant to make a record daily run of 2841 gallon cans of apples.

San Bernardino is getting ready for the Ninth Annual Orange Show to be held February 14-23, 1919. W. M. Parker is president of the association and F. M. Renfro will be manager.

One walnut packing house at Santa Ana recently had stored 1600 tons of nuts valued at about $300,000. This is said to have been the greatest value in walnuts gathered under one roof.

Coachella Valley people are appealing to the supervisors of Riverside County to continue the work on the Imperial Valley road which had been begun by the Imperial County supervisors.

One of Los Angeles' Half Century men who went to Imperial Valley to pick cotton boasts one day's work aggregating 155 pounds. He received pay at the rate of five cents per pound.

The 1918 sugar campaign of the Oxnard beet factory has closed. This factory has handled the sugar beet crop of the San Fernando Valley and the Chino Valley as well as that of Ventura County.

Ventura County supervisors are trying to decide whether the county or the men whose interests are directly affected shall pay for the guards which the state has ordered placed over the warehouses containing food stuffs. There are 29 warehouses in the county, and guarding them properly will cost $150 a day, according to the estimates of the supervisors.

The Coast and General

Florida will produce about 8,000,000 boxes of citrus fruit this year.

The United States army is consuming 125,000 pounds of beans every day.

California rice millers have agreed with the food administration on price to growers.

Florida expects to have 5,000,000 boxes of oranges, and 3,000,000 boxes of grapefruit.

Winter truck farming is becoming a great industry of the Rio Grande Valley of Texas.

Eleven hundred lambs were shipped last week from Walla Walla, Washington, to Stanfield, Oregon.

Over 800 Maricopa farmers attended the farm bureau rodeo at the experiment farm at Mesa, Arizona.

The Washington State Beekeepers' Association will hold its annual convention at Yakima, November 14-16.

Honey producers of the Yakima Valley of Washington report the sale of a carload of honey at 24 cents a pound.

Olive growers are interested in the standardization rules of the government and are anxiously inquiring, "What is a ripe olive?"

A partial victory has been won by apple shippers of the Northwest in their protest against the 25 per cent increase in freight rates.

Arizona's orange crop will show a 20 per cent increase over last year's. Seventy-five carloads will be shipped and 30 carloads of grapefruit.

Damage from codling moth has been very severe in Washington apple orchards this year, the early fruit seeming to have been the hardest hit.

The grapefruit crop of the Isle of Pines is far below normal owing to hurricane damage last September. The fruit is, however, proving very sweet.

British Columbia manufacturers of evaporated potatoes have made many large contracts and alded materially in stiffening market which had been oversupplied.

The Mid-West Horticultural Exposition planned to be held at Des Moines, November 5-8 has been postponed, because of quarantine, until December 10-13.

The Satsuma orange crop in the Houston-Galveston district of Texas will amount to practically nothing this season as a consequence of the hard freeze last year.

Louisiana's citrus crop is short owing to devastating storms which have occurred during the past three years. The fruit is maturing about two weeks later than usual.

Growers of apples in New York have not been able to make deals with evaporator houses because of a difference of 25 to 50 cents per hundred weight in price asked and offered. In consequence the evaporated apple market is going up.

An advisory council of butter, cheese and egg interests has been formed in New York by delegates from the large Eastern and Middle Western market points. A conference was to have been held in Washington with the food administration but this has been postponed by the influenza scare.

California Poultry Houses

By Jean A. Koethen

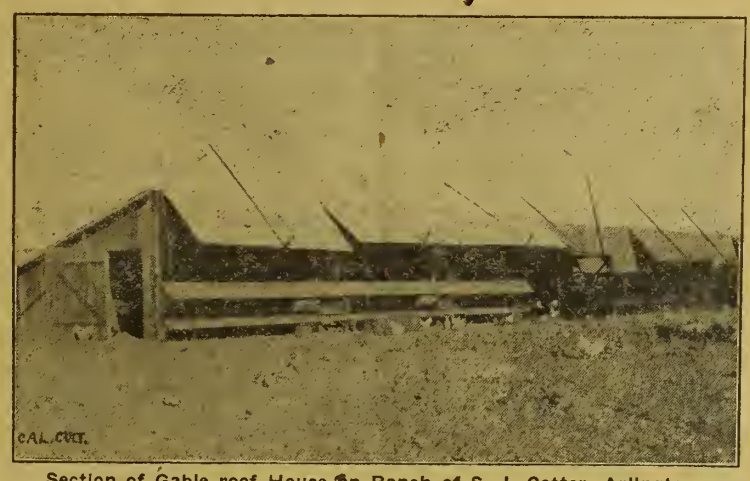
THE housing of poultry in a climate like ours is a simple matter, but not quite so simple as it would appear at first glance. We have not to reckon with ice and snow nor with the fierce winds of colder climates. On the other hand, we must plan for adequate ventilation for hot nights and for the exceptional hot spell which comes nearly every summer, as well as for protection from the blazing sun nearly every clear day in the year. Fortunately, ventilation is not expensive, and protection from the sun is largely a matter of common sense, so a good, practical poultry house should be noticeably cheaper here than in the East.

In my visits to poultry ranches the past three years—and I have made a good many—I have found three things characteristic of nearly all poultry housing: the south or east exposure, the open front, and the long laying house. In making the house front east or south protection against northwesterly winds is secured in the most practical manner. I think the east is rather preferred to south because it gives protection from the sea breeze as well, but this is a matter of locality. The east front also gives afternoon shade, while admitting the greatest amount of morning sunshine. The open front is obviously the only house for this climate, but I notice that in sections where north winds are most prevalent a modified open front is coming into use. In this house only the upper third of the front is open, but there must be more provision for circulation of air than in a house which is entirely open. The long laying house, divided into sections accommodating from 100 to 300 birds is so much more economical in every way than the colony house that it is used nearly everywhere. As a rule the different sections or divisions are connected by an alley at the front, so that every bird has the length of the alley for exercise. Only when there is some reason for separating the different flocks is the alley closed by a door.

Only two types of roof are in common use, the gable, with unequal slopes, and the shed roof. Some of our pioneer poultrymen tried the semi-monitor roof but found it unnecessarily expensive. Very little glass is required in a California poultry house, none except in some corner where a window is needed for light or ventilation. In most houses it is entirely absent. A great many laying houses are built with the hip or gable roof having its short slope toward the front and prolonged into overhanging eaves to keep out the sun. A great many others are built with the shed roof, which is cheapest of all, with an adjustable door of canvas or wood hung to the front of the roof, which can be raised or lowered at will. The accompanying cut shows an excellent model of such a house at West Riverside. I saw another at Santa Ana in which canvas covered frames were hung in the middle so that they could be tipped in any direction, letting the sun into the farthest corner or keeping it out altoegther. Most of the newer houses in the interior valleys of Southern California are built after the one or the other of these plans.

At Inglewood there are a number of houses of what is called the "double decker" plan, which seems especially suited to a locality near the coast. One of these which I visited several years ago interested me greatly. The house was built with its wooden floor about four feet from the ground, leaving a basement underneath. Little stairways from the laying house above gave the hens access to the ground below, where they could find dry scratching in the wettest weather, and doors from the basement let them into the yard. The lower third of the front of the house was closed, and the upper two-thirds protected by overhanging eaves. The roosting rooms in this house were smaller than common, providing accommodations for not more than 50 hens, but along the entire front, 100 feet or more, ran a straw covered alley where each hen might scratch as she pleased. I was told that the hens in this house laid in weather which would stop most self respecting Leghorns.

Long House on Essenberg Ranch, West Riverside



Section of Gable-roof House on Ranch of S. J. Cotter, Arlington

The long laying house, as it is generally built, is a succession of houses about 20 feet square (some a little more, some a little less) built under one roof for the sake of economy and convenience. The discussion which has been going on for several years over the respective merits of large and small flocks seems to have been decided in favor of the medium flock. A house 20 feet square will hold from 125 to 200 Leghorn hens, according to circumstances and the owner's idea of the amount of space they require. One hundred hens in such a house would rattle around; 150 would have comfortable scratching space; 200 could manage fairly well in an emergency. When pullets are put in the laying houses before they are fully grown a larger number is allowed at first, and the number is reduced as the pullets grow to maturity. The number of hens allowed in a house depends to some extent on the yard space, since a hen that is out 12 hours a day 360 days in the year requires less room inside than she would in a no-yard house. In only one instance that I recollect have I seen a no-yard house on trial. This was in Riverside, and I do not know how successful the experiment was. The no-yard house is gaining poularity in the East, but there seems little call for it here. In very many cases, however, the yards are so small as to furnish only room for sunning, and the hens are expected to live in the house.

At Gardena I know of two ranches where the Charles Weeks house is being tried out. This is a long house, entirely open in front, and divided into sections eight feet square, designed to accommodate 20 full grown hens. Each flock has its own little yard and is entirely separated from the rest. Instead of straw, sand is used on the floor, which is covered to a depth of ten or twelve inches once a year. The droppings are scraped off every few days, leaving a clean layer of sand. Its advocates claim that separation into small flocks makes for both health and egg production, and that the use of sand minimizes labor.

The ideal floor is cement, but the cost of cement of late seems to have been prohibitive—at least, I have seen few cement floors. Many poultrymen prefer the wood floor, thickly covered with straw, and many cling to the dirt floor. Probably it is a case, these critical times, of using what you have, not what you would like.

As a rule, nests, feed troughs and hoppers, and water fountains, are all arranged along the front of the house, a continuous supply of fresh water being provided by some kind of drip system. This leaves the floor, under and in front of the roosts, free for scratching. Slatted hoppers are used for dry mash and troughs for green feed and moist mash. Poultrymen who prefer to leave the whole front open arrange the hoppers within the house and the nests under the droppings boards. This gives more air but makes rather a harder house to clean.

No one who contemplates building a house should do so until he has visited the poultry houses in his vicinity and made up his mind as to their respective merits. The house shown in the accompanying cut, on the Essenberg ranch at West Riverside, is considered such a good model, and the work on this ranch has been so successful, that I understand the University of California is planning to take it over and make it a demonstration farm with Mr. Essenberg as manager.

Save the Drops

In a speech delivered recently before a meeting of farmers, W. Champlin Robinson, director of oil conservation of the United States fuel administration, told a story about a farmer who gave all his horses to Uncle Sam for war work and installed gasoline equipment. "I find," said the farmer, "that to get the best results I've got to be as kind to my motors as I was to my horses. Gasoline horses have to be fed, groomed and bedded or else they'll go lame. A man who keeps a lame motor on his place is just as bad as the man who works a lame horse."

The wise farmer will turn his attention to his machinery and there is no item of his equipment that demands as much attention as his gasoline motors. A new motor which has been running some months, requires particular attention because the "shaking down" which comes with the first year's service is generally the most telling in the life of the motor. Unless it is kept in proper adjustment after the first year's use it will lose from one half to one third of its power.

Here are some points to observe in the overhauling program:

Clean carbon from cylinders and plugs. Accumulated carbon is a fuel and power waster, besides the extra wear and tear on the motor.

Watch piston rings. See that they fit snugly. Badly fitting piston rings are responsible for the loss of power and the waste of gasoline and oil.

Go over the wiring system with special attention to timer and ignition.

Adjust the carburetor. During cold weather a rich mixture is needed for starting, but after the motor "warms up" it will give more power if the mixture is made leaner. Watch the exhaust and you will be able to determine whether you are wasting fuel or not. A smoking exhaust indicates that you are wasting gasoline or oil or both. A sharp, snappy explosion from the exhaust without smoke indicates that you are getting good service in the engine. Don't fill oil cups while motor is running, because it frequently causes spilling. Every drop of oil saved counts.

When cleaning crank case, don't throw away the oil. Strain it carefully and put it back in the crankcase. Oil cans and containers should be kept tightly covered to prevent dirt getting in and in the case of gasoline to prevent evaporation. An open container attracts dirt, insects and trash which results in great waste when using the last few gallons.

Strict supervision over farm motors is as necessary as over automobile motors. The country is badly in need of gasoline and oil for military uses. The war demands for gasoline alone are nearly a million gallons a day. These must be met. Farmers can fulfil a patriotic duty, besides putting more money in their own pockets, by observing the slogan, "Stop the leaks and save the drops."

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Here are testimonials,—mostly unsolicited,—that mean much to the prospective client:

"American agriculture owes Dr. Snowden a great but little recognized debt." (SOUTHERN RURALIST, Atlanta, Ga.; edited by Dr. H. E. Stockbridge, a distinguished agricultural chemist, who was strongly urged for appointment as Secretary of Agriculture when the latest change was made.)

(Mr. Frank Brown of Los Angeles,—grove at Naranjo, Calif.): "My orange and grapefruit grove was so poor when you analysed the soil that it was called the "grave-yard," and the biggest crop it had ever borne was eight cars of fruit; the first year after, it produced twenty cars, and the next twenty-two cars, with another big crop on the trees."

(Mr. H. E. Gilley, Los Angeles,—grove elsewhere): "By following your instructions based on the analysis of the soil my orange grove produced a 65 per cent crop of fruit, while the neighboring groves matured only 15 per cent crops, —their loss being due to the wide spread 'June drop'."

(Mr. R. W. Meeker, Glendale, Calif.): "I have owned the place for fourteen years, the trees (orange) are about twenty-five years old. Up to four years ago when you made the first analyses the place had never done much more than paid expenses, but since then it has gradually increased until it is now paying me approximately $800 an acre, and I have the largest crop on the trees I have ever had, as I expect to take nine cars of fruit from 640 trees. When you told me there was no reason why the trees should not bear a crop every year I doubted it was possible. For the past four seasons there has not been a failure, and owing to the heavy load on the trees I cannot afford to go without an analysis of the soil this year."

(Mr. Daniel Wiebers, Rivera, Calif.): "You have improved my orange grove so much that passers-by sometimes stop to ask what I did to it to get the results. You may write any testimonial you wish and I will sign it."

(Mr. S. W. Funk, Charter Oak, California.): "As a result of your analysis of my soil and prescription for my grove (orange) I consider the quality of the fruit will add $1000 to the value of my crop."

(Panama-California Exposition, Director of Works): "These (nursery) soils were treated in accordance with your prescription with very good results." Later, 10,000 large boxes containing their growing trees and plants were treated by my directions, and it is now only necessary to remind those who saw them, of the wonderful excellence and beauty of their shrubbery and flowers.

(Mr. G. M. Sparks, Oroville, Calif.): "My crop this year (1913) (after my analysis and direction) is the best the grove has ever had; in fact, the best in this section, and my fruit is the first to color."

(Mr. G. P. Von Stein, Pomona, California.): "Following your recommendations to the letter I have had exceptional good results, our packing house manager stating mine are the smoothest large-sized fruit he had ever seen."

(Mr. Cornelius Christiancy, Manager La Isabella groves, San Juan, Porto Rico): "Your diagnosis could hardly have been improved upon even if you had been here on the ground and made a study of the conditions." This diagnosis was based on the analysis of the soils sent me. The groves were very much improved, as I learned afterward from a Florida paper.

These growers (and many others) were richly rewarded for their small investments in soil analysis. It nearly always saves more in the fertilizer bill than its cost. And NO OFF YEARS when my directions are followed. You cannot afford to neglect it.

DIRECTIONS FOR TAKING THE SAMPLES

In the arid and semi-arid regions: Dig a hole with straight sides down to the depth stated below. Put a paper or close cloth in the bottom to catch the sample, and shave an even slice down from top to bottom. Mix this well and take out about a pound. Do this at several points and mix these several pound samples well together and send about one and one-half pounds for analysis. A soil auger or King's soil tube will answer for taking the samples, but if the small tube is used a half dozen holes should be made.

I find it best for a grove of 30 acres or less, to take an average sample from both the worst and the best portions of the grove so that I can have these for comparative study. But if the grove is small and the soil appears to be uniform in character, a single average sample of the whole grove will suffice. But it doesn't pay to stint.

In an orchard (grove) take the sample three feet deep.
In alfalfa and alkali soils take it four feet deep.
In grain and vegetable soils take it two feet deep.
In the humid region, take the sample for all purposes eighteen inches deep.

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Next Year's Citrus Crop

ESTIMATE of the coming citrus crop has been made by the Pacific Coast Packer, which shows a material shrinkage over the output of two years ago, which was the bumper crop. The grand total of that year, 1916-17, was 54,506 carloads, but next year's crop, barring accidents, will be vastly greater than that of last year, which was the smallest in years. This was due to the June drop, which resulted in only less than 24,000 cars for the entire state.

The shipping ends Thursday of this week, and final and exact figures will not be possible to give until our issue of November 9. But the shipments are divided approximately as follows: Oranges from Southern California, 14,200 cars; lemons, 5800 cars; oranges from Central California, 2536 cars; lemons, 115 cars; oranges from Northern California, 203 cars.

The Packer's estimates for the coming season are as follows:

"For the coming year November 1, 1918, to October 31, 1919, the prospect is for about a 75 per cent total volume of a normal crop. This is based on the normal crop as being the largest crop produced, which was in the 1916-17 season. It is the opinion of citrus shippers that the normal crop of the state should be the year of the largest output, therefore the output for the coming season will be around 43,000 cars. The estimated figures given in detail below show that Northern California, which includes the counties of Butte, Sacramento, Placer, Glenn, Yuba, Solano and Yolo, will produce 395 cars of oranges.

"The Central California belt, which includes the counties of Kern, Fresno and Tulare, will ship about 1955 cars of citrus fruits, of which about 100 will be lemons.

"Southern California district, which includes the counties of Los Angeles, San Bernardino, Riverside, Orange, Ventura, San Diego and Santa Barbara, will produce in round figures 41,000 cars of citrus fruit, of which about 7500 cars will be lemons.

"The percentage of the crops will be, according to the best information obtainable, about as follows: Valencias, 100 per cent of a normal; lemons 100 per cent, and miscellaneous varieties 75 per cent, with navels 65 per cent, making a total volume of about 75 per cent, including everything.

"The short crop of early navels from Tulare County, which is the earliest shipping belt, means that the supplies for Thanksgiving and Christmas holidays will not be very plentiful. The first shipments from Tulare County will probably move around November 15. Opening prices, no doubt, will be high. The quality of the early fruit in the North generally is not up to standard on account of being thrip marked. Present indications are that navels will run to large sizes.

"Southern California will ship very little fruit until the Christmas holidays.

"The 1918-19 citrus crop in Southern California, according to estimates received, is going to be about the same as the 1911-12 output, or around 41,000 cars. In the southern district there are seven counties shipping citrus fruit. Los Angeles will produce during the coming season 14,035 cars; San Bernardino, 13,631 cars; Riverside, 5731 cars; Orange, 3916; Ventura, 1332; San Diego, 2000; Santa Barbara, 100, making a total for Southern California of 40,745 cars."

As to Arizona: "There will be a 20 per cent increase in orange crop here this season, 75 cars being expected compared with 60 last year. The grapefruit crop is double that of last season with 30 cars expected. Quality of fruit is much better this year than last. Oranges have sold at 4 cents per pound on the trees and grapefruit at 2 cents per pound."

Florida's crop will be larger than that of last year. It will also be a couple of weeks earlier, and presumably that state will have to furnish a large part of the holiday demand. The labor shortage is the most serious problem the Florida growers have to solve now.

"The Florida citrus fruit crop has been estimated in boxes from 7,500,000 to 8,000,000. The bureau of crop estimates, department of agriculture, on September 1 estimated the Florida orange crop at 5,050,000 boxes and the grapefruit crop at 2,900,000 boxes. The increase compared with last year is 44 per cent for oranges and 31 per cent for grapefruit. The bureau of crop estimates places the condition of grapefruit October 1 at 78 against 52 last year and 78 on a five-year average. The condition of oranges is reported as 84 against 55 in 1917, and against 80 for the five-year average. The great per cent of the crop is in the hands of the growers.

"Some sales have been made at prices for oranges ranging from $1 to $2.25 per box on the tree, or on condition that they be delivered to the packing house. Grapefruit sales have ranged from 75 cents a box to $1.75 a box on the tree.

"The packing season opened up early in September this year. To date 440 cars of grapefruit have moved and up to this week 17 cars of oranges had been shipped. The acid test of one to seven in grapefruit is the only one that will hold, it was decided this week, and the color test is eliminated. State inspectors have been instructed to seize all fruit not up to the standard test. After November 1, oranges will begin to move more freely. Wet weather this week is interfering with grapefruit picking and shipments consequently are lighter."

Other citrus shippers are Louisiana, with possibly 65,000 boxes; Texas, with possibly 2000 or 3000 boxes; and Alabama, with a few boxes. These last named states are shippers principally of Satsumas, or the hardy fruit named by the department of agriculture citranges, and the entire shipments of the three states will not aggregate one day's shipping from California.

TEST OF THE GRAPES FROM DEFOLIATED VINES

The following observations made by Fred K. Howard, horticultural commissioner of Kings County, in relation to a recent outbreak of Pholus achemon in the Delta View district where a vineyard of 18 acres was entirely defoliated, are most interesting. The grower in an attempt to protect the

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fruit from the direct rays of the sun covered the denuded vines with raisin trays. Not having a sufficient number, a small part of them were left uncovered. On August 20 Mr. Howard visited the vineyard and took samples from those vines that had been covered with trays, also from those which had been left uncovered, and likewise from those which had not been subject to defoliation. A sugar test, Balling scale, showed no difference between those protected by raisin trays and those left uncovered, each registered 15 per cent, while the untouched vines showed 19.4 per cent. Again on September 4, following a hot wave when the thermometer registered from 100 to 104, tests from each group of vines were made. The covered vines in this case tested 20 per cent, while those not covered showed a sugar content of 20.5 per cent and those not defoliated tested only at 20 per cent. No effort was made to take samples of the ripest fruit.

DOMESTIC SOURCES OF POTASH

At a conference on the American potash situation, held recently in Washington, it was stated that the view of the department of agriculture is that the governmen should do all that is possible to encourage the production of potash from the cheapest sources in this country in order to enable farmers to obtain it at a low price, because foreign supplies are now unavailable.

Some of the domestic sources of potash that may be further developed are blast furnaces, from the fumes of which potash bearing materials may be precipitated; cement mills, greensand, certain shales, the brine of some lakes, mostly in Nebraska, and the giant seeweed (kelp) of the Pacific Coast.

The domestic production of potash for the coming year is expected to be about 60,000 tons, much more than the previous year, but still only about one-fourth of the annual pre-war consumption, according to A. W. Stockett of the bureau of mines.

Representatives of the bureau of plant industry of the department of agriculture pointed out that certain crops in the East are showing unmistakable signs of "potash hunger" and the general agreement at the meeting was that farmers should be informed of facts bearing on the value of potash for crop production and that all efforts should be made to supply the farmers' demand.

ARIZONA LOSES PLANT BREEDER

Prof. George E. Freeman, plant breeder of the college of agriculture and experiment station of the University of Arizona at Tucson, has severed his connection with the department of plant breeding and sailed late last month for Cairo, Egypt, for the purpose of carrying on plant breeding work in the Nile Valley. This information, writes the agricultural department of the Sperry Flour Company, was received by it with much regret, for in connection with the preparations for and since the actual launching of the statewide campaign for maximum planting of improved varieties of wheat, the company has been in close connection with Dr. Freeman during the past year.

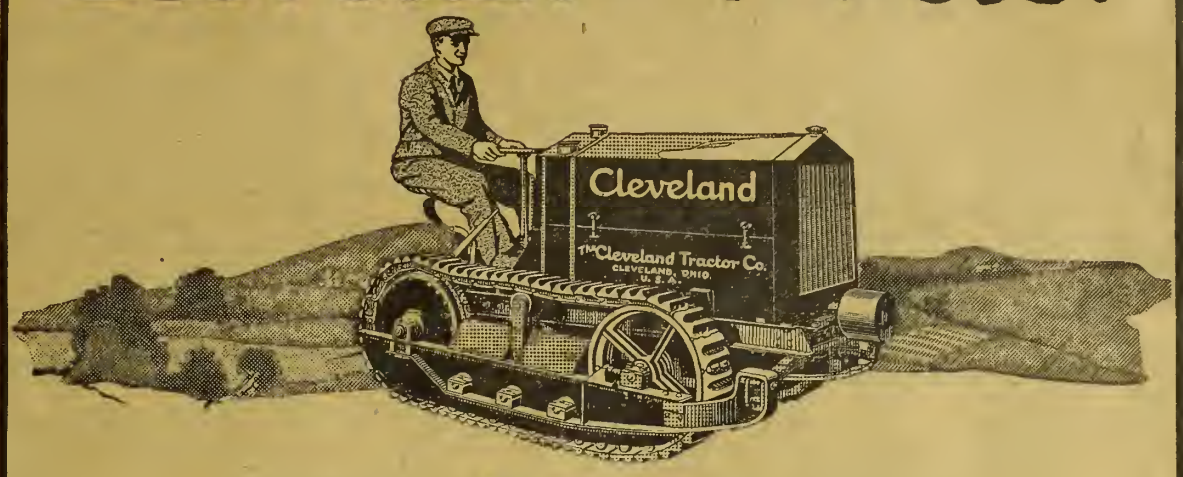
The activities of the University of Arizona's college of agriculture were responsible for saving the mill industry in that state through the introduction of Early Baart wheat from Australia about 1906. At that time the soft, white Sonora wheat, theretofore grown in Arizona, had been practically driven off the market as a result of the coming of the railroads and the entrance of the strong wheats of the Middle West, producing much more satisfactory breads.

From the start Early Baart showed up to good advantage and proved well adapted to conditions in Arizona, and it has become practically the only milling wheat there. Today Arizona stands first or second on the list of the annual reports of the department of agriculture in wheat production per acre.

W. E. Bryan, assistant plant breeder, for the time being at least is in charge of Dr. Freeman's work.

The Western Walnut Association will hold a two day session at McMinnville, Oregon, November 13. Members of the association report a very large crop of both walnuts and filberts.

Cleveland Tractor



Machinery Must Replace Muscle

Man-power is at a premium on our farms.

War has taken several million men into the service.

And in spite of these conditions, which are steadily growing worse, there must be *more* crops produced than ever before.

Machinery *must* replace muscle.

Thousands of Cleveland Tractors are successfully meeting the labor shortage and the demand for increased production.

The Cleveland Tractor, pulling two 14-inch bottoms in medium soil, plows 3½ miles an hour—eight to ten acres a day. That is all you can expect from *three* good men with *three* good 3-horse teams.

The Cleveland travels on its own tracks, laying them down and picking them up again like the famous battle "tanks." It turns around in a twelve foot circle. It gives you 12 horsepower at the drawbar for pulling, and 20 horsepower at the pulley for stationary work. It has 600 square inches of traction surface continually on the ground and will go almost anywhere. It weighs less than 3200 pounds.

But in spite of its power, the Cleveland Tractor is so small that it can easily go under and among small trees.

It will go through ditches, gumbo, sand and gravel, over unused roads, plowed fields and stubble. It will not pack the soil, will not mire or flounder.

Rollin H. White, the famous automotive engineer, is the designer of the Cleveland Tractor. It is produced under his supervision.

He has used only the best materials. Gears are protected by dust-proof, dirt-proof cases.

The track is designed for long service. The sections are joined with hardened steel pins which have their bearings in hardened steel bushings.

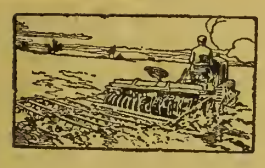
You must replace muscle with machinery on *your* farm.

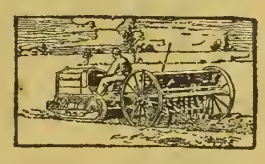
The Cleveland Tractor offers the means of meeting the emergency.

Write us for detailed information and name of the nearest Cleveland dealer.

The Cleveland Tractor Co.

19077 Euclid Ave., Cleveland, Ohio





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"30 Minutes from Service"

Prompt and efficient service for the farmer and the rancher is a vital necessity. More than ever the world at large is looking to them for sustenance.

It is our intention to place dealers and service stations throughout our territory, each equipped with a stock of parts and skilled tractor mechanics. This will enable any owner of a Cleveland tractor to telephone the nearest station in case his tractor needs repairs and inside thirty minutes have the desired parts and mechanic, if necessary, at his door at a reasonable cost.

THE Moline Wide Spread Spreader helps you to get 100% profit from your live stock. It enables you to make the best of your barnyard manure, keep up the fertility of your land and increase crops.

It is strongly built and equipped with the best mechanical devices for spreading manure in the most modern and practical way. It is a low down, endless apron, wide spread spreader and is correctly built for long life, easy loading, quick and perfect work. The Moline Wide Spread Spreader is the result of many years' experience in building manure spreaders.

The manure is subjected to a second handling by the rear beater, which pulverizes it much better than a single beater can possibly do, at the same time spreads the manure in a wide sheet instead of leaving it in streaks.

See your Moline Dealer or write us for full information and spreader catalog. Address Department 49

MOLINE PLOW CO., MOLINE, ILL.

Our Fertilizer booklet will be sent on application. Our Agent is at your service.

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Fertilize! *Fertilize!*

Hauser's Organic Fertilizers

Blood, Bone, Tankage

properly applied will increase your crop production. It's your patriotic duty to do this for bumper crops are necessary in OUR COUNTRY'S program of winning the WAR.

HAUSER'S ORGANIC FERTILIZERS are high-grade plant foods from the best organic sources. We have the right material and equipment to prepare Fertilizers to give the best results under California conditions.

Our Service Department will help you with your Fertilizer problems. Write for our booklet, FERTILIZER EFFICIENCY.

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Krogh Pumps are Absolutely Water Balanced
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THE NO TROUBLE PUMP

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Krogh Direct Motor Driven Pump

Fitted with Ring Oiling Bearings

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We also build deep well turbines, deep well plungers, horizontal and vertical pumps for mining, irrigation, drainage.

Flea-Beetles and Leafhoppers on Potato and Their Control

By H. J. Ryan, Special Field Agent, Bureau of Entomology, U. S. D. A.

Potato flea-beetles are now in evidence in the fields, and growers should be prepared to apply control measures. These insects are small, brown, jumping beetles which eat numerous small holes in the leaves of the plant. When they are present in great numbers they are capable of doing considerable damage. The grower should keep close watch on the condition of his plants and spray before serious injury occurs.

Bordeaux mixture alone at 4-4-50 strength acts as a repellant and has been found to be the most successful control for flea-bettles. To be effective it should coat both surfaces of the leaf.

For small gardens a compressed air hand sprayer is best, but commercial growers will find that an effective traction sprayer will give satisfactory service in the field. One which will give a pressure of 120 pounds or over should be obtained and for areas of more than a few acres, a large capacity tank will cut down operating expenses.

The Bordeaux mixture may be obtained as a stock solution ready to dilute and use, or may be prepared as follows:

Copper sulphate 4 lbs. or 4 oz.
Quicklime—4 lbs. or 4 oz.
Water to make—50 gals. or 12 qts.

Prepare the copper sulphate by suspending it in a gunny sack just below the surface of several gallons of water in a clean barrel. When the sulphate is dissolved, which requires three or four hours, remove the sack and stir into the barrel enough additional water to make exactly 25 gallons of the copper solution.

Prepare the lime by slaking it slowly and thoroughly in a clean barrel, strain, and add enough additional water to make exactly 25 gallons of lime milk. Stir thoroughly.

Pour the two ingredients together into another barrel or, better, directly into the spray tank, if it will hold 50 gallons. It is highly important to stir the mixture very thoroughly and to strain both ingredients before they are combined, as otherwise clogging of the spray nozzles might result. Use copper or bronze wire strainer of 18 meshes to the inch. Do not put copper sulphate or Bordeaux mixture into tin or iron vessels; use wood or copper containers. Mix the Bordeaux as needed and apply at once. It is never so good after it has settled.

In some cases it may be found necessary to spray for leaf-hoppers on potatoes. These are small, narrow, green insects which hop and fly very quickly when approached. They suck the plant juices just as does the aphid, and when present in sufficient numbers seriously weaken the plant.

Some success has been obtained by the use of 40 per cent nicotine sulphate in the following proportions:

Nicotine sulphate.....⅜ pint
Rosin fish oil soap.....2 pounds
Water .....50 gallons

If needful, a combination Bordeaux and nicotine sulphate spray may be applied, when both flea-beetles and leaf-hoppers are prevalent. In such case, add the fish oil soap (dissolved) and then the ⅜ pints of nicotine sulphate to 50 gallons of Bordeaux instead of 50 gallons of water.

Further information on potato pests may be had by applying to the Division of Publications, Washington, D. C., for Farmers' Bulletin 868.

Cabbage Worms and Control

Cabbage worms of various species are beginning to make their presence known on fall cabbages now in the field. The most important of these is the common cabbage worm, a green larva about an inch long when grown. The parent of this worm is the imported cabbage butterfly, white with black spotted wings. The butterflies lay their eggs mostly on under sides of cabbage leaves. The young worms hatch from them in four to eight days, feed on the leaves and reach maturity in 10 to 14 days. Then each attaches itself by a thread around the body to a leaf, stalk, fence post, or any other support, and transforms to a pupa called a chrysalis. From this the butterfly emerges in from 7 to 12 days. In Southern California there may be as many as five or six generations during the season. The last chrysalids formed in fall remain thus over winter on dead stalks and produce butterflies the following spring. All of the cabbage worms being "chewing" insects may be controlled by arsenical sprays.

Spray with an arsenical in soapy water.

To make 50 gallons of spray dissolve four pounds of laundry soap or other good soap in several gallons of water by boiling. Add this to enough water to make 50 gallons. Then stir in the arsenical (1½ pounds of powdered arsenate of lead or three pounds of paste form, or other arsenicals according to directions on package). The soap is to make the liquid adhere better to the smooth leaves.

To make one gallon of spray use one-half ounce of powdered arsenate of lead, or one ounce of paste form and an inch cube of soap.

Dusting may be substituted for spraying, using one part of powdered arsenical with four parts of air-slaked lime. In small gardens the mixture may be shaken on the plants from a cheesecloth bag. Apply thinly while the dew is on the leaves.

Since the cabbage head grows from inside the plant there is no danger from poisoning. If outer leaves are removed before cooking, spraying is safe to within three weeks of harvest. If spraying is begun early in the season there will be little damage from late broods of worms.

Plant More and Better Wheat

Even after allowing ten per cent under normal requirements owing to voluntary restrictions in consumption by the people of the country at the request of the United States food administration, there is a deficiency of 10,262,000 bushels of wheat in California for the 1918 crop under the estimated reduced requirements. This is an increase of deficiency of nearly 1,000,000 bushels over last year, which in turn showed half as much increase of deficiency over the average for the period of 1910-1913.

These impressive figures from the department of agriculture's monthly crop report furnish striking evidence of the opportunity for extending the wheat acreage in this state. California and Arizona are the only far western states that do not produce more wheat than is required for their own consumption. The surplus for the entire nation this year is figured at 318,291,000 bushels, while a year ago the average was 77,682,000 bushels, as compared with the five-year average of 108,854,000 bushels.

The normal consumption in California is figured at 5.6 bushels per capita, 0.3 bushels above the average for the United States as a whole. On a population estimate of 3,119,412, after deducting ten per cent as indicated above, the consumption is projected at 15,722,000, to which is to be added 780,000 bushels for seed. This year's production in California is figured at 6,240,000 bushels; the aggregate for the country as a whole, 918,920,000 bushels, surpassed only by the record production of 1915 of 1,025,801,000.

The 1918-19 food program is both a national and a personal obligation. The nation has never failed to meet all obligations and the individual must not.

After the war Europe will continue to look to America for help; there will be no crops raised overnight.

GILA COUNTY WAR GARDENS SURPLUS SAVED

The county home demonstration agent and county agricultural agent of Gila County, Arizona, were married a short time ago. They have also united in conserving the surplus products grown on more than 100 acres of irrigated land divided into one-eighth acre gardens. On July 1 a preliminary report showed that the value of products gathered previous to that date amounted to $81,200.

These two agents have worked together in developing two methods of saving surplus production from these gardens. The first is a cooperative marketing store located near the gardens and on the edge of town on the main traveled road. It has been found possible to market such perishable products at a cost of ten per cent to the grower. The second method of saving the surplus is the development of a community canning kitchen which is under the supervision of the home demonstration agent and free to each of the cooperating gardeners. This plan also presents the opportunity of teaching the most approved and economical methods, which are new to many of the gardeners who have always bought their products direct from the store as they were needed or did without them.

VICTORY MESSAGE OF FRANCE TO HER PEOPLE

1. Do not forget that we are at war. In your smallest expenditures never lose sight of the interests of the native land.

2. Economize on the products necessary for the life of the country: Coal, bread, meat, milk, sugar, wine, butter, beans, cloths, leather, oil. Accept rations. Ration yourself as to food, clothing, amusements.

3. Save the products of the French soil, lest some day you deprive your father, your son, your husband, who are shedding their blood to defend you.

4. Save the products that France must buy from foreign countries. Do not drain reserves of gold which are indispensable to victory.

5. Waste nothing. All waste is a crime which imperils the national defense—prolongs the war.

6. Buy only according to your needs. Do not hoard provisions; your selfishness raises prices and deprives those of smaller means of things indispensable to existence.

7. Do not travel unnecessarily. Reflect that our trains are, before all, destined for the transportation of the troops, the feeding of the population, the needs of our national production.

8. Do not remain idle. According to your age and your ability work for your country. Do not consume without producing. Idleness is desertion.

9. Accept without murmuring the privations which are imposed upon you. Reflect upon the sufferings of those who are fighting for you, upon the martyrdom of the population whose homes have been destroyed by the enemy.

10. Remember that victory belongs to those who can hold out a quarter of an hour the longest.

That France may live, she must be victorious.

* * *

Let this also be America's message to her people.

THE GARRET

There is one place in the great majority of American homes, and only one place, that ever shows a shadow of selfishness. It gathers into its confines the castoffs and greatly cherished old things, many of which are surrounded with fond recollections, and once these treasures pass into its possession, they are seldom given up. We call it the garret.

We are hoarding in these garrets thousands upon thousands of garments that will be of great comfort to the people of war stricken Europe. It doesn't make any difference how old, how faded or how tattered the garments may be, they have well organized bands of workers in Europe who will be only too happy to patch things up. Neither does it matter whether it is old shoes, old hats, dresses, underclothing, linen or bed clothing, the babies and children of Belgium and France are positively crying for anything that will protect their poor little bodies.

It is inconceivable that any American farm wife, mother or sister will permit a single garment to remain in the garret when she knows that it might add one grain of comfort to a poor soul in Belgium who has been bereft of everything because of the stand they took in the interest of world wide democracy and the protection of homes.

Let us not lose sight of the fact that America benefited by the suffering of Belgium, and it is little indeed to expect that our good housewives, and even the men, will do their utmost to cover the bodies of those poor souls with as little delay as possible. Surely our heads would hang in shame if it ever could be said that our protectors in Belgium and France died of cold and exposure for the want of what is today hanging useless in the garrets of America.

This appeal is made to our farm homes because it is generally believed that the garret is very much more of an institution in the farm home than in the city. Most of our city homes are cramped and there is no place for storage. New York, Chicago, Philadelphia and other big cities are famous for their flat dwellings. In these city flats and apartments they keep nothing beyond what is absolutely necessary, but still there have been many ship loads of warm clothing sent to those poor sufferers abroad from the big cities. We must now reach out into the rural districts with more thoroughness in order to relieve the suffering of these people.

Let every garret be searched and every ounce of clothing that can possibly be spared shipped immediately to the nearest Red Cross headquarters.

FUEL OIL SHORTAGE CAUSES FOREST FIRES

Forest fires, resulting from the enforced use of wood as fuel in engines used in logging, have become so numerous and have assumed such proportions that the logging companies in Northern Idaho are finding difficulty in filling their lumber contracts. In order to relieve the situation, the fuel administrator for Idaho has favorably endorsed a petition from the lumbermen and the forest service, asking that the use of oil as fuel in logging operations be restored during the fire emergency which now exists.

A quarrel between two people to settle things is a good deal like a dog fight in a flower bed, the only things that get settled are the flowers.

"That's the Kind of Fruit You Want"

"And that's the kind you'll always get from us. Of course they can't all be 'firsts'—there is bound to be a runt here and there—but you'll get the biggest percentage of first grade fruit if your trees are always in prime condition—as ours are."

"You see—the reason that we are successful with our trees is because we start them right. When we plant we blast out the holes with

HERCULES DYNAMITE

That loosens up the soil and gives the young trees a chance to get their roots well started. The trees need nourishment and can't get all they need unless the ground around them is loosened more thoroughly than it can be with a spade. Then, when the trees begin to bear we keep the ground around them well loosened by blasting between the rows every year or so. This keeps them in good, healthy condition; and healthy trees bear prime fruit."

"I found out about dynamite for farm use about four years ago. Sent to the Hercules Powder Co. for their free book 'Progressive Cultivation.' It tells you all about the uses of dynamite on the farm and in the orchard. The book has put money in the bank for me and I wouldn't be without it."

HERCULES POWDER CO.

1013 Chronicle Building

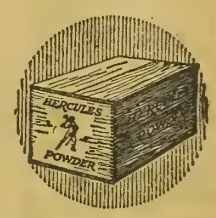
San Francisco California

Hercules Powder Company,
1013 Chronicle Building, San Francisco, Cal.

Gentlemen:—Please send me a copy of "Progressive Cultivation." I am interested in dynamite for _____

Name _____

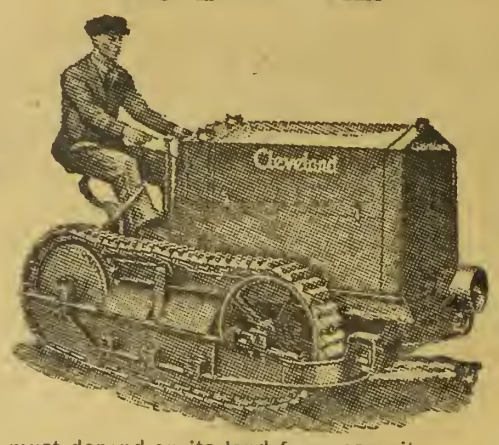
Address _____



The Cleveland Tractor

"The Little Tank"

It takes the place of men gone to the front



It will fill the ships now being built

California must depend on its land for prosperity.
Our wealth does not come from manufacturing.
The more the land produces the more the owner will make.
Are you taking advantage of the best times the farmer has ever known?
Let us show you how you can increase your profits.

—F. H. Stow

Cleveland Tractor

Pulls a six horse load. Does the work of nine horses. Works on all kinds of ground. You don't need hand picked land.

Protect Yourself —ORDER NOW

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2072 Center Street
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A DUROC OPPORTUNITY

H. P. Slocum & Son

Must Sell

150 Head of Modern Durocs

The junior member of the firm has been placed in Class One-A and is expected to be called any time. Because of his age, the senior member can not undertake to carry on the herd, and for that reason it has been decided to close out the entire herd.

The Best Blood of the Breed

It is generally admitted that no herd in the West is superior in point of breeding or individuality. We have the blood of High Orion; Great Wonder; Giant Invincible; King Orion Cherry and King of Orions. There is no better breeding. We selected our foundation stock for size, prolificacy, quality and bone. Our herd produced more champions and prize winners at the 1918 California and Oregon state fairs than any other herd.

Read What We Offer

Three herd boars, including Uneeda Wonder, that Eastern breeders would price from $1500 to $3000 each. Herd sows that we have refused to price. Young gilts and boars sired by some of the greatest boars of the breed.

Everything Must Be Sold

Absolutely nothing reserved and everything is priced to move.

Write at once for prices.

H. P. Slocum & Son

Willows, Calif.

California Cultivator
Costs $1 per Year

Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Acorns for Turkeys

In the October 19 Cultivator a subscriber wishes to know if acorns are good for turkeys. I have never seen them fed to tame turkeys but have killed lots of wild turkeys in the mountains of Old Mexico, State of Durango, which live part of the year almost entirely on acorns, and it gives the flesh a fine flavor and makes them very fat.

The best deer meat I ever ate, in fact it did not taste like deer meat, but more like fat beef, with of course a little different flavor, was from deer that had practically nothing in their stomachs except acorns and was as fat as the fattest beef could possibly be.—R. L. Fisher, Ramona.

* * *

I have had experience in feeding acorns to turkeys, used to be in the turkey business a few years back in the extreme northern part of the state where there was an abundance of acorns, and we never cracked them for the turkeys. No sir, Mr. Turkey swallowed them whole, but not if they had a hole in them where a worm had gone in. He takes the acorn in his bill and rattles it, to test it. If it sounds hollow he knows it is wormy and rejects it. We used to gather tons of acorns for winter use for our turkeys, would gather them in sacks and dump them in a heap on a board floor in a shed and never had any trouble keeping them. By cracking them they make good chicken feed too.—Harry Miers, Galt.

Milking Before Calving

I want to ask if one begins milking a cow say a week or a couple of days before she has her calf, if it causes her to give less milk afterwards than if she had not been milked at all until after she freshened? — Subscriber, Ramona.

No, it is often necessary to milk some persistent cows through the period when they are ordinarily given a rest, and again it is necessary to keep the cow's udder in good condition before calving.

Mosquitoes

What can be done to kill mosquitoes that live in the cesspool?—Subscriber, Modesto.

A cesspool should be closed so tightly that the only escape for gas would be through the water trap and this would prevent any mosquito pest. However, where the pool or any stagnant water is open to the air and infested with the larvae of mosquitoes it can be controlled by a strong solution of lye being added, or, much cheaper, a thin layer of kerosene or other oil put over the top.

Cooperative Retailing

Somewhere in California the farmers organize a Farmer's Educational and Cooperative Union. The capital is provided by each man taking as much stock as convenient, $10, $20, $50, $100, $200, etc. They are supposed to pack their own fruit, buy merchandise at wholesale and sell at retail without profit to members. Transact all their business at actual cost to the members of the organization. But under such management as it had, profits equaled the capital invested. The management then decided it would be better to make it a stock company, or profit sharing company. Will you please tell us how the profits should be divided? Whether according to capital invested only, or whether according to patronage, or both, or how and in what proportion? —Subscriber, Morgan Hill.

As to the division of profits there have been different practices; it is impossible to say which is best under all circumstances. The greater number of these have been, we believe, along the Rochdale plan, i. e, division of profits according to purchases made. This plan calls either for a large membership in order to supply a working capital or a number of public spirited members who are willing to advance sufficient funds. Where this is done it is usually on a six or seven per cent basis so that fair return is made for the loan but there is absolutely no opportpnity for profit. We believe the more recent tendency has been toward profit sharing according to the investment in the stock of the company. This is a question which can only be answered by the community as to which plan best fits its needs.

Keeping Beans

Kindly inform me what process can be used to keep beans stored for family use free from bean weevil.—Subscriber, Petaluma.

If the beans are not infested when stored the only method to keep perfect is to store in bins, barrels or other airtight containers and keep the weevil from reaching them. However, the safest method would be to assume that the beans are infested and act accordingly by giving thorough treatment with bisulphate of carbon. Place the beans in airtight containers and set over them shallow vessels filled with bisulphate of carbon. For proportions of the bisulphate of carbon see Mr. Morrill's article on page 446 of last week's issue.

Celluloid Leg Bands

Can you tell me where I can get spiral celluloid leg bands for my chickens? Last year I bought some kind of self locking leg band, but all my pullets lost it. They were too big, and I fear it will go the same way this year.—Subscriber, Fresno.

These are carried by most large poultry supply houses advertising in the Cultivator.

Oak Root Fungus

Noticing in your book "Farm Questions Answered" the inquiry and reply regarding oak root fungus would like to tell you of a little experience we had with that trouble. About four years ago we discovered in our grove five orange trees badly affected by

Since 1902

Pomona
DUPLEX-PLUNGER
Pumps

One Pump Will Do Your Work

Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

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Pomona "Made Right" Irrigation Gates and Valves

PRICES RIGHT — QUALITY RIGHT
SEND FOR BOOK C.

Pomona Mfg. Co.
POMONA, CAL.

oak root fungus. Part of the trees lost almost all their leaves and were apparently almost dead. The treatment consisted in digging out every particle of root to be found and in exmixing through the soil dug over a liberal supply of air slacked lime. Today every tree is alive and thrifty.—H. A. R., Pomona.

WAR EMERGENCY TRACTOR SCHOOLS

Written for California Cultivator
By J. B. Lillard

AS A WAR emergency measure the state of California is establishing in different sections tractor schools. There is at the present time a serious shortage of tractor mechanics and operators, and the organization of these schools is in response to this urgent demand.

This undertaking is being financed by the California state board of control and the controller, out of the emergency fund at their disposal, and is being administered by the department of vocational education of the state board of education. John C. Beswick, director of vocational war work, is in charge, representing the state.

The state is divided into three units, each of which will contain ten centers approximately, with a four weeks course in each center. In this way about 30 schools will be operated during the next 40 weeks.

The first center of unit No. 1 is now being operated at Madera, and centers in the other two units will be started as soon as health conditions permit. There are 25 students enrolled in the day classes at Madera and 37 in the evening classes.

The four-weeks course at each center is divided into two parts: first, the gas engine; second, farm tractors and machinery. During the first two weeks of the course the student spends his time disassembling, repairing, assembling, and operating gas engines. The third week is devoted to setting up and repairing the entire tractor, and most of the last week will be spent in operating the tractor in the field.

The instructors are practical machinists and operators who know how to impart their knowledge to others in a definite, clear way. It wi ' be noticed that there is an entire absence of lectures, as such explanations on the part of the instructor will deal with definite problems as they arise. The day classes being in session six hours daily six days a week, the student will receive approximately 864 hours of practical work under expert supervision.

The school is serving two purposes: it will give farmers, farmers' sons, and others an opportunity to learn thoroughly the repair and operation of tractors for the farm, and it will give draft eligibles an opportunity to secure special preparation for tank service at the front.

DEHYDRATION ADVANCED

The department of agriculture will inaugurate a campaign to increase the use of dehydrated fruits and vegetables, which compare favorably for table use with the fresh article. Showing the necessity for this campaign, attention is called to the fact that about 8,000,000 pounds of Irish potatoes were "thrown to the dump" in New York City alone last January, having been frosted and rotted in transit.

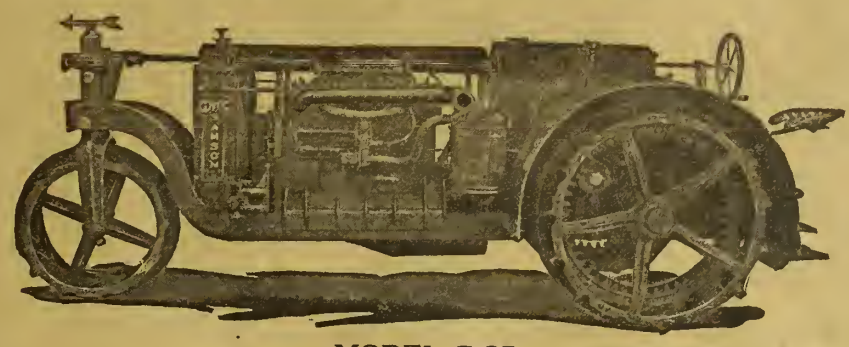
The department has just secured an appropriation of $250,000 for dehydration work and has appointed Lou D. Sweet to take it in charge.

The war department has already recognized the value of dehydrated produce. Last spring the army ordered and used 14,000,000 pounds of dehydrated food stuffs, costing about $3,000,000 and during the past few weeks have placed orders with the Canadian and American dehydrating plants for more than 40,000,000 pounds to be manufactured and delivered between now and July 1, 1919. This represents an expenditure of about $10,000,000. These orders have included chiefly potatoes, carrots, onions, and a small supply of soup mixtures. The soup mixtures comprise eight different vegetables.

GMC TRACTORS

SAMSON SIEVE-GRIP TRACTOR

GMC TRACTORS



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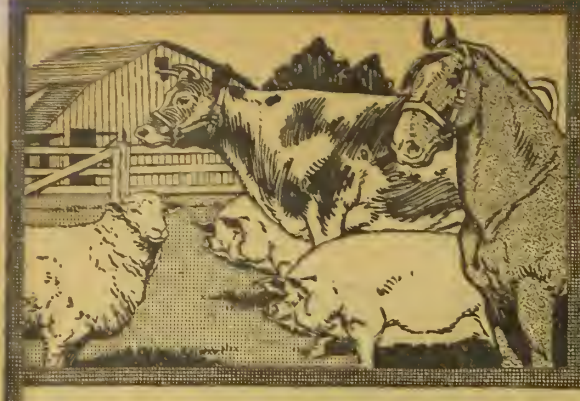

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Keep your animals' bowels open and regular—drive out the worms—keep their blood rich—keep their digestive apparatus in order—by feeding Dr. Hess Stock Tonic.

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Live Stock in War Time

Editor's Note: This article, by Dean Eugene Davenport of the University of Illinois college of agriculture, appeared in a recent issue of the Guernsey Breeders' Journal under the title of "Dairy Herds In War Time." It is such a sane discussion of the effects of war on the live stock industry, as a whole, that we take the liberty of reprinting it.

IT WOULD be useless to claim that no animal can be useful until its name and number have been recorded in a printed book, issued by some society. It would be equally useless to hold that every animal with such a printed pedigree is an efficient and valuable producer. There are differences in animals of the same breeding just as there are differences in brothers, even in twins. However, all things considered and in the long run, the so-called pure bred or pedigreed animals are admittedly superior for the very good reason that they have descended from some carefully selected stock rather than from the common run of cattle. That is, if a thousand registered animals be taken at random, and an equal number of unregistered chosen at random should be put against them, the registered stock will come out far ahead in any contest, not only at milk production, but from pork production to horse racing, and nowhere is this superiority of well bred stock more pronounced than in the dairy business. If anybody doubts this point let him study all the facts and he will find that in animals as in men "blood will tell."

Few will dispute this statement and yet many will doubt its practical application because of the increased cost of well bred animals. Particularly will they believe that a time of high prices, such as now, calls for economy, especially in production, and the temptation is strong to neglect the breeding side of the industry, whereas a period of high prices is precisely the time when everything connected with good breeding should be taken advantage of in every possible way.

The only explanation of the fact that well bred stock is upon the whole more efficient than that which is carelessly bred is that they are more economical consumers of feed either because of more general vigor, or because of a less predisposition to disease. Whatever the reasons that account for the results, the fact is well established that with the proper amounts of feed, good breeding increases the efficiency of its consumption.

Herein lies the first reason for careful breeding at a time like this. We are short of feed and we are bound to be shorter still before the war is over. Particularly will this be true of the grains, and even though pedigreed animals are more expensive than unpedigreed, yet the increased cost is negligible when confined to the bull that heads the herd, and it is insignificant as compared with the increased outlay for feed. So far as labor and barn room are concerned, the same principle holds. This is a time for the elimination of numbers and in so far as the same results can be accomplished by the reduction.

It is a common practice now to sell a portion of the herd in order to have feed for the remainder. This is certainly preferable to short feeding the herd on the one hand, and buying inordinately expensive feed on the other, but if the sale of a portion of the herd results in an over feeding of the remainder, it would be better to devote a portion of the proceeds of the reduction to the improvement in breeding of the head of the herd.

We often hear it said that registered animals command a higher price because it costs more to produce them, but that is not the real reason, because, in the last analysis, when the public buys a thing, it does not ask what it cost to produce it, but only what it can do. It may as well be understood therefore, in general, that the better bred animals bring the higher prices because they are worth more and because they can do more.

Differences in efficiency in production between first and second class animals may account for but little when feed is plentiful and cheap, but when the feed becomes scarce and costly, these differences become at once important, and that is one reason why a period of war should be a period of improved breeding, and it is the same reason which dictates the policy that an old country, if it is prosperous, is almost invariably a country of well bred live stock.

There is another reason for building up the herds of the country and improving their breeding in these times of war, and it is this. Say what we please, it is a somewhat costly job for the common run of farmers to improve the breeding of their herds. In a business whose margin of profit is as narrow as that of farming, it is extremely difficult if not hazardous for the average man to undertake systematic improvement of any kind in a period of low price. On the other hand, when prices are high and rising almost anything within reason is safe, and every desirable improvement is certain to prove profitable.

A rich man may hold his herd together through hard times and low prices, but in general, herds must be built up with rising markets, a point not sufficiently understood by many farmers, and even overlooked by many breeders.

Quite aside from individual considerations, a time of war is no time to neglect any useful and needful thing, nor is it a time to do everything in the cheapest way. It is a time to get results, to undertake constructive things. It all means, of course, additional expense, but without this additional expense, the live stock interests are certain to dwindle.

If we are to have a long and exhaustive war, the victory will come in the end to the side that best keeps his house in order and that means, so far as live stock is concerned, herds that are selected and bred for highest efficiency. Such stock will, of course, be registered. It will be in enormous demand when the war is over, if for no other reason than because there are so many people who play safe by doing as little as possible while an emergency is on, then plunging as soon as the squall is past.

It is better for the individual and vastly better for the industry and the country at large, to establish and maintain a safe and progressive policy in all times like this. Playing safe, however, is not consistent with a horizontal line of reduction in expenses, for a progressive policy means additional expense under anything like existing conditions.

Up to the present point the writer has had chiefly in mind the owner of a dairy for the production of milk, presumably from a herd of grade cattle or of common stock. So far as the breeder of pedigreed stock is concerned, his policy is clear at this time. Whatever may be the call from across the water for the restocking of European farms, we are bound to have at the close of the war a call for restocking of farms in this country. The writer believes that this call will be widespread if not universal, and that the herds will be taxed to the utmost limit in the meeting of this demand. There will be a temptation on the part of many breeders to save and record every calf not an absolute disgrace to its breed. This mistake has been made before and it will react as it has always reacted—to the disaster of the individual and to the detriment of the breed. Feed, room and labor are now too expensive to permit the saving of scrubs, no matter how respectable their ancestry, and whatever the demand for pedigreed live stock may be later on, a reasonable but high minimum should be established in every self respecting breed association, below which animals should not be furnished even for so laudable an enterprise as the rebuilding of herds after the war. It is not enough to say that animals will be so scarce that everything will "go," or to defend the practice of indiscriminate selling by the ancient argument that many an animal breeds better than he is himself.

What the world will want after this war is really superior animals. Without doubt it will pay a liberal price for animals of this kind, but the shrewd buyers, and those who will pay the best values, will insist upon records which will show whether the pedigreed animals really are performers, and the best service, in the opinion of the writer, which any breeder can now render his breed will be rendered through the keeping of adequate and accurate performance records of every individual in his herd.

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CHAMPIONSHIPS AT THE NATIONAL DAIRY SHOW

The twelfth National Dairy Show was held at Columbus, Ohio, October 10-19. The show was permitted to open on time notwithstanding the ban on public meetings because of the influenza epidemic. However, the attendance was very light and before the week was over a quarantine was placed on the cattle barns.

Plans had been made for the greatest exhibit of the dairy industry ever held in this country. The principal awards follow:

Holstein-Friesians: Senior and grand champion bull, Johanna's Bonheur Champion 2nd, owned by Chestnut & Sons, Dennison, Kansas. Junior champion, Johanna Glenda Lad, owned by Maywood Farm, Rochester, Minnesota. Senior and grand champion cow, Minerva Beets, owned by R. E. Haeger, Algonquin, Illinois. Junior champion, King Segis Pontiac Tantalus Calamo, owned by R. E. Haeger.

Jerseys: Senior and grand champion bull, Raleigh's Oxford Prince, owned by Ed C. Lasater, Falfurrias, Texas. Junior champion, Noma's Perfect Raleigh, owned by Longview Farm, Lees Summit, Missouri. Senior and grand cow, Oxford Majesty's Gipsy, owned by L. V. Walkley, Plantsville, Connecticut. Junior champion, You'll Do's Pet 2nd, owned by L. V. Walkley.

Guernseys: Senior and grand champion bull, Ladysmith's Cherub, owned by D. D. Tenny, Crystal Bay, Minnesota. Junior champion, Cherub's Prince, owned by W. W. Marsh, Waterloo, Iowa. Senior and grand champion cow, imp. Bella 2nd du Grand Fort, owned by Island Farm, Island, Minnesota. Junior champion, My Figtree of the Prairie, owned by W. W. Marsh.

Ayrshires: Senior champion bull, Cavalier's Lord Stuart, owned by Adam Seitz & Son, Waukesha, Wisconsin. Junior and grand champion, Nancy's Mint Master, Wendover Farm, Bernardsville, New Jersey. Senior and grand champion cow, imp. Harleyholm White Rosie 3rd, J. A. Ness, Auburn, Maine. Junior champion, Cavalier's Hillhouse Rosebud, owned by Adam Seitz & Son.

THE MORRIS SALE OF HOLSTEINS

One of the important events of the fall season will be the draft sale, consisting of 105 head, 90 cows and 15 bulls, from the herd of A. W. Morris & Sons Corporation. The sale will be held at the Morris farm, near Woodland.

The herd is really too well known to require any extended comment. For the past few years the public has become accustomed to reading of new records, many of them world records, established by Morris cows.

The Morris herd has not only developed remarkable seven and 30 day cows, but has perhaps developed as many long distance production records, as any herd of the breed. Yearly records have fallen to this herd, and have later become a part of two, three and four year records. Some day, and that day not far distant, all the dairy breeds will discard the short record for the yearly test.

Among the cows in offer, three have produced from 30 to over 33 pounds butter in seven days; 30 of them have records from 20 to over 29 pounds butter in seven days; and 30 have yearly records—the highest of which is over 24,000 pounds milk, and over 1000 pounds butter.

By far the majority of the cows are bred to six of the Morris bulls, every one of which has sired a world's record daughter, or has for a dam a cow with one or more world's records.

The offering also includes 15 bulls, representing some of the best breeding in the Morris herd.

$100,000 DAIRY FIRE

The large dairy barn of Singleton & Haskel, eight miles north of Beaumont was destroyed by fire October 31.

Beside the building there was heavy loss of feed, silage and machinery.

The fire started in that portion of the building which had just been filled with Kaffir corn.

The loss was estimated at $100,000.

Many people possess a thousand acres of possibilities and have about a half acre under cultivation.

Catalog, barn plans, and full information FREE —write today.
Make Your Winter Barn Work Easy
YOU CAN NO MORE AFFORD TO CLEAN OUT YOUR BARN WITH A WHEEL-BARROW THAN TO CUT WHEAT WITH A CRADLE. One cuts into your legitimate profits just as surely and as deeply as the other—IT ROBS YOU OF MONEY which should be in the bank, and of luxury which should be in your home.
Louden's Litter Carrier Outfit
stops the waste. Makes work lighter and life pleasanter — especially in winter. Saves daily many hours of the hard disagreeable work—barn cleaning with a wheel-barrow in cold, wet weather!
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On account of his close relationship to the balance of our herd we are going to sell our JUNIOR HERD SIRE, the four year old bull
Cora's Glen 31541
Grand Champion at Riverside County Fair in 1916
His sire is an A. R. bull which has two A. R. daughters.
His dam has an A. R. record of 12,286.3 pounds of milk and 676.31 pounds of butter fat, average 5.5 per cent, made at ten years of age.
He combines the blood lines of many of the great members of the breed and traces 25 per cent to Imp. Masher's Galore and 12½ per cent to Governor of the Chene.
He is a show bull and is backed up by production records. Inquire of
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Bull calves at reasonable prices.

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Lalley-Light power performs essential farm work every day, and saves approximately 250 man-hours during the active farming season alone.

Eight years of practical farm use have shown Lalley-Light to be an economy and a necessity for the average farm.

The nearest Lalley-Light dealer can give you figures to convince you that it IS a necessity on your own farm and will be an economy. Call on him and see the plant in operation.

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THE ELECTRIC LIGHT AND POWER FOR EVERY FARM

Live Stock News Notes

Market Raisins Through Hogs

Members of the Fresno farm bureau plan to utilize the large quantities of damaged raisins by feeding them to hogs.

$250,000 Paid Hanford Dairymen

Patrons of creameries in the Hanford district expect to receive nearly $250,000 for butter fat delivered the past month. For the month ending October 15 the average price paid for butter fat was 61.4 cents.

McCarty Buys a King Jones Boar

Alex D. McCarty, who maintains a herd of Poland Chinas at his Riverina Farms, Modesto, writes that he has just purchased a boar sired by the noted King Jones.

King Jones is regarded by many Eastern Poland China breeders as one of the best sires of the breed. He rendered splendid service in the herd of Fred Sievers, Audubon, Iowa, and was recently sold at public auction for $1450.

A Distinguished Duroc Establishment

R. K. Walker of the Windsor Ranch and Peters, Lamson & Walker, Bonita, San Diego County, writes that they now have on hand over 2100 head of hogs, of which 250 are pure bred Durocs. This firm is one of the largest hog producing organizations in the state, and have been one of the leading factors in making Southern California a center of Duroc interest. The hog plant is considered a model and the ultimate plan contemplates replacing all the high grade sows with pure breds, and maintaining a herd of about 2000 head at all times. Consequently it will be necessary to market practically all the produce, saving only the extreme tops for breeding purposes.

This firm is particularly fortunate in their herd boar, Great Model. He is not only an exceptionally well bred boar, being by Great Wonder, the sire of so many of the most popular boars of the breed, but he has proven his ability to sire the type of Duroc most acceptable to progressive breeders. The brood sows that are furnishing the foundation for this herd are daughters of such boars as Grand Model, Top Sensation, Grand Model Supreme, Great Wonder, Cherry Chief and Cherry's Friend, and have been retained in the herd because of their size, prolificacy and quality.

Losses of Livestock in France

United States food administration figures show that in the period between December 31, 1913, and January 1, 1918, there was in France a decrease of 2,598,710 head of cattle, including bulls, oxen, cows and calves. In sheep, including rams, the decrease totaled 6,238,390. In hogs, including boars, sows and pigs, the figure was 2,868,860. In view of these figures and the fact that there undoubtedly have been further reductions since the first of this year, it is plain that the United States must come to the aid of her great sister republic in every way possible.

Anderson Sells Berkshires

Frank B. Anderson, a Berkshire breeder of the Natomas district near Sacramento, reports having started a new breeder in the business. W. D. Howe, a milling man of Oakland, purchased a foundation herd of three young pigs for his ranch at Aptos, Santa Cruz County, and followed his original purchase with the order of a bred sow and two more weanling sow pigs. Other recent sales reported by Anderson include: A junior yearling boar to H. A. Meckfessel of Arbuckle, Colusa County; senior boar pigs to the Rogers Ranch Co. and L. N. Carpenter of Lovelock, Nev., and a junior boar pig to Nahas Bros. of Merced.

A $50,000 Farm Auction

In an auction sale held recently on the 5000 acre ranch owned by Ben E. Couch, Chico, over $50,000 worth of live stock and equipment was disposed of. Mr. Couch has leased his ranch and plans to enter the army.

English Holstein Cows Sell for $22,500

In a dispersion sale of Holsteins held in England, 77 cows and heifers brought an average of $1090 per head, and 10 bulls averaged $1940.

The sensation of the sale was the price paid for the five year old cow, Golf Sietske 10th, which changed hands for the record price of $22,500. Golf Sietske 10th was bred by H. L. de Vries, a well known Holland breeder. She gave 9664 pounds milk with her first calf, the milk averaging 4.09 per cent butterfat. With her second calf she produced (in 39 weeks) 9287 pounds of 4.02 per cent milk, and from April to June of the present year she averaged 50 pounds milk per day, under purely natural conditions.

University Live Stock to Invade East

The University of California is planning to make an exhibit at the International Live Stock Exposition at Chicago November 30-December 7, that will be a great credit to the state.

The exhibit will consist of fat steers, wethers and barrows. There will be one full carload of Duroc-Jersey barrows that will be hard to beat. Professor J. I. Thompson and herdsman Homer Stokes are now putting the finishing touches on these. Pens of Poland-China, Berkshire and Hampshire barrows are also entered. I would not be surprised if one of the Poland-China barrows did not win grand championship honors.

Alex McDonald has the great Shorthorn steer, California Marvel, and several other cracking good ones in preparation. A blue-gray junior calf, sired by the white Shornhorn bull, Sultan Mayflower, and out of an Angus cow, is considered by many to be a very remarkable calf.

George Phillips, shepherd of the University farm flocks, has as "mellow" a lot of fat wethers as you ever put your hand on.

The institution has an excellent chance of winning the college specials on cattle, hogs and sheep. They have animals good enough to win, but one

Buy Good Ones—Breed Better Ones

Never before in the history of California Holstein sales have buyers had an opportunity to buy so many high record and highly bred females in calf to such high record bulls as will be found in the

First Tulare Sale
125 Registered Holsteins
Tulare, California, November 20-21, 1918

There are females in this sale bred to two bulls out of a 40 pound dam; three bulls out of 35 pound dams; one bull out of a 36 pound dam; one bull out of a 32 pound dam; two bulls out of 30 pound dams; one bull out of a dam that made over 1300 pounds butter in one year; four bulls out of dams that made over 1100 pounds butter in one year; two bulls out of dams that made over 1000 pounds butter in one year. THIS IS THE HIGHEST RECORD LOT OF REFERENCE SIRES EVER LISTED IN A SALE IN THE WEST.

The females to be sold include: THE HIGHEST RECORD JUNIOR TWO YEAR OLD ever offered at public sale in the west; daughters of cows with records up to over 31 pounds butter in seven days and sired by such bulls as Mutual Fobes Longfield De Kol, Prince Gelsche Walker, Sir Aaggie De Kol Acme, King Korndyke Sadie Vale, Sir Skylark Ormsby Hengerveld, King Segis Pontiac, King Segis Pontiac 13th, Arcady Pontiac Wayne Hengerveld, King Mead of Riverside, Sir Veeman Korndyke Pontiac, Spring Farm King, Pontiac Jewel Butter Boy, Spring Farm Pontiac 5th, Aralia De Kol Pontiac Segis, Segis Pontiac De Kol Burke.

BULLS IN THE SALE: This is the opportunity of the season for breeders and dairymen to secure herd sires, for there are bulls in this sale by great sires and out of dams with records up to over 30 pounds butter in seven days and large yearly records, representing some of the greatest producing and transmitting families of the breed.

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All stock guaranteed as represented. Write for terms and particulars. We offer for immediate delivery, 200 two year old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.

Scharbaur & Eidson, Midland, Texas — **Elevation 3000 Feet**

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—of gasoline is in its boiling points. In "Red Crown" they form a continuous, uniform chain,—giving easy starting, quick acceleration, power and mileage. Look for the Red Crown sign.

STANDARD OIL COMPANY
(California)

RED CROWN GASOLINE

The Gasoline of Quality

never knows what will happen in the show ring.

At any rate, the showing that will be made is one that every California farmer can be proud of.—W. S. G.

$7500 for a Guernsey Cow

A new price record for Guernsey females was recently established when the cow, Langwater Nancy, was sold by the Florham Farms to Anderson T. Hurd, New York City, for $7500.

Langwater Nancy holds fourth place in Class A of the offcial records of the Guernsey Club.

Thos. Harrison Buys Eastern Cow

Thomas Harrison, Glen Ellen, purchased the five year old milking Shorthorn cow, Yellow Star, in the Otis Sale, for $500.

Mr. Harrison is one of the pioneer breeders of milking Shorthorns in California, and has rendered effective promotion work for the breed.

31 Milking Shorthorns Average $987

In the recent sale of milking Shorthorns from the herd of C. A. Otis, Willougby, Ohio, 31 head sold for an average of $987.

The undefeated show heifer, Lady of the Glen, was purchased by L. D. May, Granville Center, Pennsylvania, for $5000, which is the highest price ever paid for a milking Shorthorn cow.

British Milk Yields

The British board of agriculture has just issued the first volume of its new "Register of Milk Yields of Dairy Cattle" in England. In this first volume there are entered 572 cows, all of whom have made over 8000 pounds milk. Three hundred and ninety-six of the 572 cows qualifying are Shorthorns and only three cows, including England's champion milk producing cow, a Holstein, and two runners-up of the same breed exceeded the records made by the Shorthorns. The high Holstein cow produced 19,646 pounds of milk. The high Shorthorn cow produced 16,239 pounds milk.

LIVE STOCK QUERIES

Milo Maize for Silage

What can a dairyman afford to pay for standing milo for the purpose of making silage? What would it be worth after being frosted severely? Would the headed fodder be of much value? How does a ton of silage compare in feeding value with a ton of alfalfa hay? Is it necessary to feed concentrates with milo maize silage? —Subscriber, Hemet.

Your questions can only be answered in a general way, for the reason that local conditions are important factors. Ordinarily silage made from milo maize of good quality and with heavy heads is considered somewhat below corn silage in feeding value.

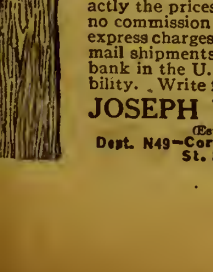
In bulletin 282, published by the University of California, the total digestible matter in 100 pounds of milo silage is given as 14.6 pounds. Henry gives the total digestible nutrients in 100 pounds alfalfa hay at 51.6 pounds. It would appear, therefore, that milo silage is worth somewhat less than one-third the value of alfalfa hay. However, it has been demonstrated that the succulent qualities of silage increase the value of a ration to a greater extent than is indicated by any analysis.

In arriving at the value of milo in the field, one must necessarily take into consideration the quality of the stand, and it should be purchased on the basis of weight. Then if one can figure what it costs per ton to cut, haul and put in the silo, he can determine what he can afford to pay for the standing crop.

Silage made from the stalks alone would perhaps be worth less than one-third the value of silage from the whole plant.

The silo is the best means for handling frosted corn or milo. It is usually preferable to allow milo to stand until after frost rather than cut it too green.

If your cows are only average producers, and are receiving alfalfa hay supplemented by a good quality of milo silage, it is quite doubtful if it would pay to feed concentrates. However, with high producing cows it is economy to add concentrates to the ration.



SULPHUR

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards SIX times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

Try our new brand of VENTILATED Sublimed Sulphur, 100 per cent pure, for making Paste — (Atomic Sulphur) and for Dusting.

For Lime Sulphur Solution, use our DIAMOND S Brand Refined Flour Sulphur. We can furnish you this sulphur at such a low price that it will pay you to mix your own solution.

To create additional available plant food, drill 100 to 400 pounds of our Diamond "S" Brand Powdered Sulphur per acre. It has proven to increase various crops up to 350 per cent.

San Francisco Sulphur Co.
624 California St. San Francisco, Cal.

We are equipped to make immediate shipment. Send for illustrated booklet; price list and samples. Tel. Kearny 871.

Get The Most Money For Your Raw FURS

The money you get out of your furs depends upon the grading. When you ship us a No. 1 skin, you get paid for a No. 1, not for a No. 2. We absolutely guarantee to pay exactly the prices we quote. Positively no commission charged. We pay all express charges, and refund postage on mail shipments. We refer you to any bank in the U. S. as to our responsibility. Write for Price List.

JOSEPH ULLMANN, Inc.
(Established 1864)
Dept. N49—Cor. 5th and Rosabel Sts.
St. Paul, Minn.

Calco WATERING AND FEEDING Troughs

THE Calco Individual Feeding and Watering Trough is made of Armco Iron—rigid construction—is easily cleaned—can be bolted down to prevent overturning—saves feed and is economical.

Calco Troughs cost less than wooden disease traps—and last for years.

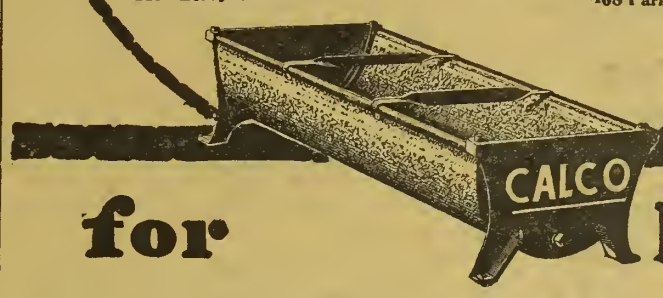
Diameter	Depth	Length	Price
10¼ in.	5 5-16 in.	40 in.	$3.70
10¼ "	5 5-16 "	60 "	4.50
14 "	7 3-16 "	24 "	4.55
14 "	7 3-16 "	120 "	9.60

Other sizes from 24 to 120 inches priced from $2.95 up.

Order one Calco Trough—you will want others. Advise size wanted and we will ship immediately.

Circular describing Calco Troughs and other hog products upon request.

California Corrugated Culvert Company
LOS ANGELES, 419 Leroy Street — BERKELEY, 408 Parker Street



for Hogs

The Greatest Auction Sale West of Chicago

Tagus Ranch, Tulare, California

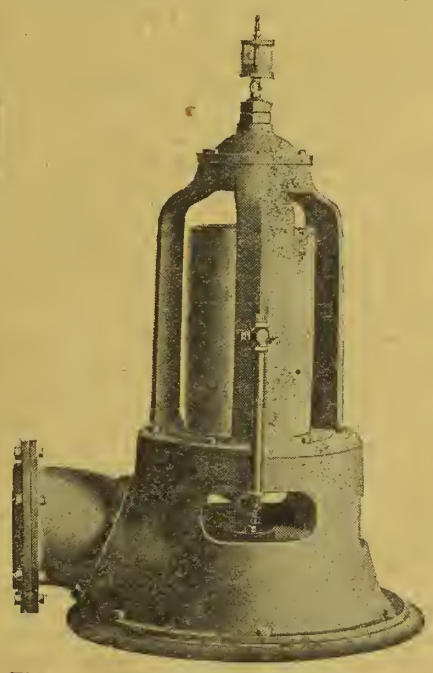
December 10 - 11 - 12 - 13, 1918

90 REGISTERED HOLSTEIN CATTLE.
200 GRADE ANGUS COWS.
15 REGISTERED POLLED ANGUS BULLS.
100 GRADE SHORTHORN COWS.
3 SHORTHORN BULLS.
24 REGISTERED PERCHERON AND BELGIAN MARES.
15 REGISTERED PERCHERON AND BELGIAN STALLIONS.
100 HIGH GRADE BROOD MARES, WORK HORSES AND MULES.
5 15-35 HORSE POWER SANDUSKY TRACTORS.
2 BULL TRACTORS.
$50,000 WORTH OF WAGONS, PLOWS AND IMPLEMENTS FOR EVERY KIND OF CROP.

Watch for Future Announcements

Auctioneers: Col. Ben A. Rhoades; Harold B. Rhoades.
Owners: Pacific States Corporation, Tagus Ranch, Box D, Tulare, Cal.
Sale Manager: C. L. Hughes, Sacramento

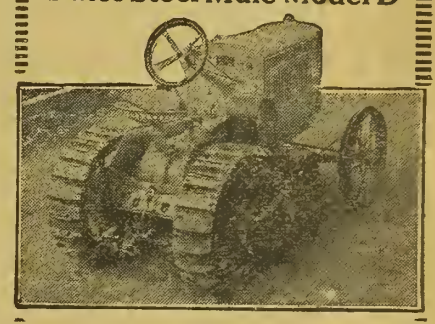
Johnston Turbine Pumps



The only pump made in which EVERY bearing is absolutely sand proof and lubricated. Large Volume from small diameter wells. Send for descriptive literature.

American Well and Prospecting Company
Manufacturers of Water and Oil Well Machinery
407 East Third St. Los Angeles, Cal.

Bates Steel Mule Model D



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Ditching Made Easy

With this Simplex Ditcher

Fine For Irrigation. Can't be beat for cutting laterals and cleaning out old ditches. Works in any soil. Digs V-shaped ditch down to 4 ft. Practically all steel. Reversible. Equal to 100 men. Pays for itself in a day. Also grades roads. Fills gullies. Back fills and levels ground.

Sent on 10 Days' Trial

Simplex Farm Ditcher Co. Incorporated
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Write for Ditching book and money back guaranty

B. HAYMAN & CO., Los Angeles
H. C. SHAW COMPANY, Stockton

The JERSEY

IF you just want to "keep a cow" any cow will do. But if you want thrifty cows that will conserve feed; that will show real profit every day of the year, you must have Jerseys. They can advertise other breeds as they may, but they can't compare them to Jerseys on money making merit. Let us give you the facts, free, and then write to Breeders for prices and pedigrees.

THE AMERICAN JERSEY CATTLE CLUB
322 West 23rd Street New York City

Jersey Bull
FOR SALE
A fine straight one, bred right, priced right
S. F. WILLIAMS
ORLAND, CAL.
Member Orland Jersey Cattle Club.

Fuimus Farms - Jerseys
Herd Headed by You'll Do Oxford's Lad
Write Us Your Wants
J. E. Wherrell
1581 Sedgwick St., Riverside, Cal.

Venadera Herd
REGISTERED JERSEYS
Young bulls from proven dams in Register of Merit
GUY H. MILLER
MODESTO, CAL.

ALL MY RECORDS are made under ordinary dairy conditions. The farmers cow is
The Jersey
YOUNG BULLS FOR SALE
C. D. HAYWORTH
MODESTO, CAL.

Young Jersey Bulls
FOR SALE
One at the head of your herd will pay big dividends on his cost. Write to
W. J. HACKETT
MODESTO, CAL.

Get One of My Jersey Bulls
to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glynllyn.
Visitors Welcome Correspondence Invited
A. A. Jenkins
R. R. Box 46 Tulare, Cal.

SAFETY
We believe our conditions of sale are as definite and favorable to the buyer as it is possible to make conditions covering anything as variable and flexible as living animals.
Safe sales are good for the buyer and best for the seller in the long run.
We accept high class registered animals in our consignment sales, or will sell your whole herd. Write us.
California Breeders Sales and Pedigree Company
C. L. Hughes, Sales Mgr.
Sacramento - Cal.

Shorthorn Cattle and Berkshire Hogs
Shorthorn herd headed by Count Glory 426982, Grand Champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.
513 Hearst Bldg., San Francisco
Carruthers Farms, Live Oak, Cal.

Brighton Farm Herds
Registered Shorthorns
and
Berkshires—Both Sexes
H. L. & E. H. Murphy
Perkins, Cal.

Hog Prices Based on Corn Ratio Discarded

With corn prices tobogganing as a result of peace talk the food administration has been forced to abandon the 13 to 1 ratio as a basis for stabilizing the hog market and announcement is made that a positive minimum of $17.50 per cwt. for the month of November has been agreed to by the packers. This price is represented to be the daily minimum on average packer's droves, excluding throw-outs, and applies to the Chicago market.

In a statement just issued by the food administration the situation regarding the hog market is outlined in part, as follows:

"The entire marketing situation has so changed since the September joint conference as to necessitate an entire alteration in the plans of price stabilization. The current peace talk has alarmed the holders of corn, and there has been a decline of from 25 cents to 40 cents per bushel. The fact that the accumulations of low-priced corn in the Argentine and South Africa would, upon the advent of peace and liberated shipping, become available to the European market, has created a great deal of apprehension on the part of corn holders. This decline has spread fear among swine growers that a similar reduction in the prices of hogs would naturally follow. Moreover, the lower range of corn prices, would, if incorporated in a 13 to 1 ratio, obviously result in a continuously falling price for live hogs. In view of these changed conditions many swine producers anticipated lower prices and, as a result, rushed their hogs to market in large numbers, and this over-shipment has added to and aggravated the decline.

The information of the department of agriculture indicates that the supply of hogs has increased about eight per cent while the highest unofficial estimate does not exceed 15 per cent increased production over last year. On the other hand, the arrival of hogs during the last three weeks in the seven great markets has been 27 per cent more than last year, during the corresponding period, demonstrating the unusually heavy marketing of the available supply. In the face of the excessive receipts some packers have not maintained the price agreed on last month. On the other hand, many of the packers have paid over the price offered to them in an endeavor to maintain the price. The result in any event has been a failure to maintain the October price basis determined upon the September conference and undertaken by the packers. Another factor contributing to the break in prices during the month has been the influenza epidemic; it has sharply curtailed consumption of pork production and temporarily decreased the labor staff of the packers about 25 per cent.

It must be evident that the enormous shortage in fats in the Central empires and neutral countries would immediately upon peace result in additional demands for pork products which, on top of the heavy shipments to the Allies, would tend materially to increase the American exports, inasmuch as no considerable reservoir of supplies exists outside of the United States. It seems probable that the present prospective supplies would be inadequate to meet this world demand with the return to peace. So far as it is possible to interpret this fact, it appears that there should be even a stronger demand for pork products after the war, and therefore, any alarm of hog producers as to the effect of peace is unwarranted by the outlook.

In the light of these circumstances, it is the conclusion of the conference that attempts to hold the price of hogs to the price of corn may work out to the disadvantage of pork producers. It is the conclusion that any interpretation of the formula should be a broad gauged policy applied over a long period. It is the opinion of the conference that in substitution of the previous plans of stabilization, the live stock sub-committee of the agricultural advisory board, together with the specially invited swine representatives, should accept the invitation of the food administration to join with the administration and the packers in determining the prices at which controlled export orders are to be placed. This will be regularly done. The influence of these orders will be directed to the maintenance of the common object, namely, the stablization of the price of live hogs so as to secure as far as it is possible fair returns to the producer and the insurance of an adequate future supply.

These foreign orders are placed upon the basis of cost of hogs to the packers.

As the result of long negotiations between this body and the packer's committee, representing the 45 to 50 packers participating in foreign orders together with the Allied buyers, all under the chairmanship of the food administration, the following undertaking has been given by the packers:

"'In view of the undertaking on the per cent, and we can handle such an part of the food administration with regard to the co-ordinated purchases of pork products, covered in the attached, it is agreed that the packers participating in these orders will undertake not to purchase hogs for less than the following agreed minimums for the month of November, that is a daily minimum of $17.50 per hundred pounds on average of packers' droves, excluding throw-outs.

The ability of the packers to carry out this arrangement will depend on there being a normal marketing of hogs based upon the proportionate increase over the receipts of last year. The increase in production appears to be a maximum of about 15 per cent and we can handle such an ket. It is believed that the plan increase'."

(Signed) THOS. E. WILSON,
Chairman, Packers Committee.

It is believed by the conference that this new plan, based as it is upon a positive minimum basis, will bring better results to the producer than average prices for the month. It does not limit top prices and should narrow the margins necessary to country buyers in a more variable market. It is believed that the plan should work out close to $18 average.

The whole situation as existing at present demands a frank and explicit assurance from the conferees represented, namely, that every possible effort will be made to maintain a live hog price commensurate with swine production costs and reasonable selling values, in execution of the declared policy of the food administration to use every agency in its control to secure justice to the farmer.

The stabilization methods adopted for November represent the best efforts of the conference, concurred in by the food administration, and the live stock sub-committee of the agricultural advisory board, together with special swine members, and the representatives of the packers; to improve the present unsatisfactory situation which has unfortunately resulted because of the injection of uncontrolable factors.

HOW MINNESOTA LIVE STOCK BREEDERS WORK TOGETHER

County agents and farm bureaus in Minnesota have been active in organizing cooperative live stock breeders' associations. One association, recently formed through the efforts of the farm bureau in Mille Lacs County, Minnesota, to encourage the breeding of high grade Holstein and Guernsey cattle, is composed of five groups of farmers, each group owning from 50 to 75 cows. Under the cooperative arrangement the sire belonging to the group is kept by a farmer located as centrally as possible and receiving $50 a year as pay for caring for the animal. The cost of maintenance and the original purchase price of the sire is divided equally among the farmers in the group. Interchange of sires between the groups lengthens greatly the period of service of these high grade animals. Reports from Mille Lacs County to the United States department of agriculture say that the plan is working well and gives promise of assisting greatly in the development of the live stock industry.

Calf Enemies
WHITE SCOURS
BLACKLEG
Your Veterinarian can stamp them out with Cutter's Anti-Calf Scour Serum and Cutter's Germ Free Blackleg Filtrate and Aggressin, or Cutter's Blackleg Pills.
Ask him about them. If he hasn't our literature, write to us for information on these products.
The Cutter Laboratory
Berkeley, Cal., or Chicago, Ill.
"The Laboratory That Knows How"

STOP LOSING CALVES
You can Stamp Abortion Out OF YOUR HERD and Keep It Out
By the use of
DR. DAVID ROBERTS'
"ANTI-ABORTION"

Small Expense.
Easily Applied. Sure Results.
Used successfully for 30 years.
Consult DR. DAVID ROBERTS about all animal ailments. Information free. Send for FREE copy of "The Cattle Specialist" with full information on Abortion in Cows.
DR. DAVID ROBERTS VETERINARY CO.
212 GRAND AVE., WAUKESHA, WIS.

Hopland Stock Farm
Hopland, Cal.
50 Berkshire Suckling Pigs eligible to registry, sired by Iowana Rival Majestic 194736, son of Rival's Champion 112500, and sons of Iowana Rival Majestic, at $12.50 weaned.
Registered Sows, Gilts, and Boars for sale.
San Francisco Office,
226 Southern Pacific Building

Five Cows Yielded 11.58 lbs.
Butterfat in 24 hours and 25.65 pounds of solids, not fat.
These were the Holstein-Friesians that won the Sweepstakes Prize of the Ohio Agricultural Society. The nearest competitor made 10.05 pounds fat and 14.34 pounds solids, not fat.
The Holsteins always lead in production.
HOLSTEIN CATTLE
Send for our booklets—they contain much valuable information.
HOLSTEIN - FRIESIAN ASSOCIATION OF AMERICA, Box 120 Brattleboro, Vt.

YOU CAN'T CUT OUT
A BOG SPAVIN, PUFF OR THOROUGH-PIN, BUT
ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.
will clean them off permanently, and you work the horse same time. Does not blister or remove the hair. $2.50 per bottle, delivered. Will tell you more if you write. Book 4 R Free.
W. F. Young, P.D.F., 244 Temple St., Springfield, Mass.

Herefords · Shorthorns
250 Head Eastern Registered Bulls and Cows
HARRIS & SONS
Haas Building, Bdwy & 7th Phone Pico 2492
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Prize Winning Berkshires
Two High Class Jr. Boars, choice $65.00. Six Fall Boars, choice $50.00.
Sired by Ames Rival.
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Rhoades & Rhoades
Expert Live Stock Auctioneers
Pure Bred Stock Sales a Specialty
Sales conducted in all parts of California and adjoining States. Twenty-five Years' Experience.
BEN. A. RHOADES, Auctioneer
1501-3-5 So. Main St., Los Angeles, Cal.

NOTE: The opening of a new market for skimmed milk is of real importance to the Dairy Industry of the United States. The facts set forth below deserve the thoughtful attention of the farm people in America, and of all Agricultural Extension Workers.

HEBE

—and the Dairy Farmer

HEBE is a new food product—a compound of evaporated skimmed milk and vegetable fat. This is plainly stated on the label of every can.

HEBE is principally recommended for cooking, baking, in coffee, and with cereals. It contains 7.8% fat, and 17.7% non-fat milk solids. Its fuel value is 663 calories per pound.

Skimmed milk is a by-product of the Dairy Industry. Skimmed milk is very large in quantity but comparatively small in net returns to the Dairy Farmer.

Milk of the United States

1917 Production
84,611,350,000 pounds

Distribution

Direct to Consumer	43.1%
Whole Milk to Calves	4.3
Condensed	2.9
Butter	4.0
Cheese	5.0
Ice Cream	3.7
Skim Milk	37.0
	100.0%

These were once waste products

Gasoline was once a troublesome waste product to the kerosene refineries.

Coal tar was a nuisance to the gas plants; now the base of thousands of valuable products.

Gluten was thrown into the rivers near the starch factories; cotton-seed was burned for centuries. Gluten and cotten-seed are now indispensable dairy feeds, and have many other uses.

Glycerine was once a waste product of the soap factory—it is now more valuable than the soap.

In 1917, according to Government estimates, over thirty billion pounds of skimmed milk were fed to live stock, or wasted. Where there is no market for this by-product as human food, there is value in feeding it to growing animals, though only a small percentage of the solids which represent the food value of milk is recovered in the animal as meat or other product.

HEBE, by the scientific replacing of the fat solids of whole milk by another fat in the form of the pure, edible fat of the cocoanut, makes possible the reclaiming of a portion of this skimmed milk as a human food—thus creating a new and more important market for this by-product. As the distribution of HEBE widens, it will exert more and more a beneficial influence upon the Dairying Industry.

To the general public HEBE offers a less expensive food product for certain specified uses. HEBE qualifies as an essential alternative food, and its place in this field is well illustrated by the history of the use of lard for shortening and frying. Until a few years ago, it was thought that only animal fat could be used for cooking. Lard is still used—in greater quantities than ever before—but the excellent vegetable fat cooking mediums are no longer considered substitutes or imitations. They, too, have a constantly growing market.

HEBE keeps step with the trend of the times. It is the inevitable development of modern food production methods. Because of its invention the food supply of the country is enlarged, through the scientific combining of a by-product of the Dairying Industry which heretofore had been kept out of the kitchen economics of the average home, and a pure, wholesome, refined vegetable fat, the nutritive value of which is well established.

A booklet telling the interesting story of HEBE and its value to the Dairy Industry will be sent free on request. Ask for it. Your name and address on a post card will bring it post paid. Address The Hebe Company, 3108 Consumers Bldg., Chicago.

THE HEBE COMPANY

CHICAGO SEATTLE

HOLSTEINS

OF WORLD'S RECORD BREEDING
AT ORDINARY PRICES

That is what we expect will be the story at the close of

A. W. Morris & Sons Corporation Sale

90 Registered Holstein Cows
15 Registered Holstein Bulls

Tuesday, November 12, 1918

We take into consideration that while this sale will contain some of the very cows that have made the Morris herd world famous, a number of them are past ten years old, some have blemished udders, and these are bound to sell at very modest prices considering their tremendous records and the world's record bulls to which they are bred.

What a splendid opportunity it will be then for buyers to secure these great cows even for the calves they are carrying and every one of them is positively guaranteed to be a breeder or money back.

Think of being able to buy such females as these: Pet Salambo of Riverside, the 33 pound cow that made over 1000 pounds butter in one year, bred to King Morco Alcartra, son of Tilly Alcartra; the 30 pound cow Pauline Creamelle Mercedes, bred to Sir Aaggie De Kol Acme; the 29.87 pound cow Leda Gerben Alcartra 2nd, bred to King Morco Alcartra.

LOOK AT THESE BRED TO PRINCE GELSCHE WALKER: The 28 pound Laura Netherland Gerben 2nd; a 19 pound three year old; a granddaughter of Tilly Alcartra; a 20 pound cow; an 18 pound granddaughter of Jetze Zwarthak; and others with A. R. O. records and splendid breeding.

AND THESE BRED TO KING MEAD OF RIVERSIDE: A 16 pound three year old; an 18 pound three year old daughter of Prince Gelsche Walker; a 23 pound four year old daughter of Prince Gelsche Walker; a 25 pound daughter of a 28 pound cow; a 22.90 pound three year old daughter of Colantha Sir Pontiac Aaggie; a daughter of Korndyke Queen De Kol's Prince that made 634 pounds butter in one year as a junior two year old; a 24 pound daughter of Ignaro De Kol that made 762.73 pounds butter in one year; a 17 pound two year old daughter of Prince Gelsche Walker; and others with A. R. O. records.

AND REMEMBER that a large number of other high record cows are bred to King Morco Alcartra, Sir Aaggie De Kol Acme, Segis Pontiac De Kol Burke, and King Korndyke Pontiac 20th.

EVERY ONE OF THESE SIX BULLS HAS SIRED A WROLD'S RECORD DAUGHTER OR HAS FOR A DAM A COW THAT MADE ONE OR MORE WORLD'S RECORDS.

15 Bulls Will Be Sold

Sired by the great Morris herd bulls and out of dams with good seven day or yearly records. DAIRYMEN, attend this sale for it will be bargain day for you.

Every animal positively guaranteed to be a breeder.

No animal in this sale is tuberculin tested.

Management

California Breeders Sales and Pedigree Company

J. M. Henderson, Jr., President C. L. Hughes, Sales Manager
Sacramento, California.
Auctioneers: Col. Ben A. Rhoades, Col. Cy N. Clark.

Come to Stanislaus County for Registered Holsteins

STANISLAUS COUNTY LEADS
All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

Segis Pontiac De Kol Dutch
Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. E. E. Freeman, Rt. B, Modesto

HOLMES STOCK FARM
Registered Holsteins of best breeding. Young bulls for sale.
R. L. Holmes Modesto, Cal.

When you buy why not buy the best?
We have it in Stanislaus.

Thompson's Registered Holsteins
Young bull calves for sale with yearly record backing.
Luther Thompson, Rt. A, Box 351, Modesto Cal.

Our Senior Herd Sire is KING KORNDYKE HENGERVELD ORMSBY 7th
Five of his sisters sold at public auction for $23,800, an average of $4760.
This blood has made some of the world's greatest producers.
Our junior herd sire is TOYON KING KORNDYKE SOLDENE son of a 33.23 pound daughter of King Hengerveld Aaggie Fayne.
Young bulls for sale. No females.
REGISTERED BERKSHIRE BOARS, sons of the $1500 boar Star Leader, for sale.

Kounlas Registered Stock Farms, Modesto, Cal.

Economy Stock Powder

SAVE YOUR HOGS

Not a stock food, but a medicine. No salt, no oilmeal, no mill sweepings. Not a cure-all, but a genuine conditioner. Helps thousands of the best breeders and hog-raisers in the country raise profitable hogs.

Send for a FREE Sample and Book

Economy Hog and Cattle Powder Company

Hearst Bldg. San Francisco, Cal.

The California Cultivator

Weekly—24 to 32 Pages One Dollar per Year

A STOCKMAN IN THE MAKING

Written for California Cultivator
By Howard L. Henrick

A pig contest having been arranged for the Southern California Fair, Riverside, I decided to enter, and having won a prize I thought a few words from me might be of interest to the readers of the Cultivator.

I first built a pen and covered one end with a good roof, leaving the other end open to the sunlight. I then purchased, in May, a young Hampshire shote, weighing about 40 pounds.

I fed him a mash of ground barley and bran, and after that I fed him rolled barley, soaked over night. He liked this feed. He was given plenty of green feed and last of all a finishing feed. I think the rolled barley is the best finishing feed.

The neighbors were very kind and gave me their scraps and also a lot of windfall pears.

His feed up to the time I took him to the fair cost about $10. He was then six months old and weighed about 150 pounds. I think he will weigh almost 200 pounds now.

I also made a self feeder so constructed that he has feed before him all the time.

The care of the pig has been a pastime, and I think he will prove a paying investment.

I have taken over my father's poultry and am going to try my hand at poultry raising. I also deliver papers before and after school, and most of the money I have earned has gone into Thrift Stamps. I have now about $25 worth. I am 11 years old.

ABERDEEN-ANGUS AT CALIFORNIA SHOWS

California cattlemen, who visit the Liberty Fair at Los Angeles and the California International Live Stock Show at San Francisco will have an opportunity of studying one of the choice collections of Aberdeen-Angus owned in this country. The herd, owned by Congdon & Battles, North Yakima, Washington, is exhibiting at the California shows before going to Chicago for the International Live Stock Exposition.

Angus are a comparatively new breed for California although there are a number of herds in the state. The University of California has maintained a small herd at the University Farm, Davis, and some of the best Angus steers produced in recent years have been developed at Davis. The successful showing of Angus steers by the university has attracted the attention of cattlemen, and considerable interest is being manifested in the breed.

Quite recently a carload of pure bred bulls were purchased from the Washington herd by a California cattle operator.

The show herd, now at Los Angeles, consists of 14 head and among them are some rare types that will undoubtedly be heard from at the great Chicago show.

FIRST TULARE HOLSTEIN SALE LISTS SELECT OFFERING

A study of the catalog of Holsteins offered in the first Tulare sale, to be held at Tulare, November 20 and 21 reveals the fact that California Holstein breeders are in a position to make a sale offering in which the 14 service bulls listed for reference, constitute the highest record groups ever represented in a Western sale.

Such a statement is naturally good advertising, but it means much more to the dairy interests of this state.

There is no mystery regarding high production of milk and butter fat. There are just two ways in which high producing herds have been built up—by breeding and feeding—and the man who figures that he can "beat the game" by using inferior or plainly bred animals is doomed for failure just as certainly as is the kaiser.

The whole business of modern dairying is developed along such clear cut lines that there is really no excuse for the many failures. One of the first precepts of modern dairying is: Buy the best bred bull you can afford, or buy a heavy producing cow bred to a proven sire and raise your own herd bull.

The Tulare sale will afford a wide opportunity for selection as the consignors have listed 125 head of cows, heifers and bulls, and included in the lot are cattle to suit every purse.

Shells every ear *right!*

Big or little, wet or dry, without injuring corn or breaking cobs.

Thorough shelling! Appleton "clean shelling" is *clean shelling.* Remarkably flexible finger-like devices hold *any* size ear with exactly right tension for best work—biggest ears can't get damaged by too much pressure; nubbins can't get thru partly shelled by too little pressure.

APPLETON Sheller

Thorough separating. U-shaped, raised-lip screen agitates both upward and forward—allows *all* shelled corn to fall through to cleaning pan below, where all trash and dirt is blown out. No other method does such *complete* separating and thorough cleaning. The Appleton does

more work with less power

because it is simpler—fewer chains, sprockets and gears. This also means less repair trouble and longer life. The Appleton proposition is *certain to win you* when you *know* all about it. Send for booklet *today.*

H. C. SHAW CO.,
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Send for FREE Book!

The modern farmer knows what he is about; knows which is more profitable: deep plowing, big acreage, big crops, with less labor; or the old-fashioned slow plowing near the surface, with teams and many men.

He knows that tractor farming is more economical and more profitable; that the Yuba 12-20 is everything it should be to make farming successful.

Yuba upkeep is less. Yuba life is longer. Yuba farmers are making good money.

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From highest nitrogenous feed. Decomposed and concentrated by age in their own liquide, containing the highest percentagee of Nitrogen, Phosphoric Acid, Soluble Potash, and readily available Humus.
Shipped commercial dry. Cars average 22 to 24 tons. Saves four-fifths labor in application. Thousands of tons now being shipped to citrus and deciduous growers in California.
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CALIFORNIA JERSEYS ARE DELIVERING THE GOODS

Beauty of Walnut Park, a six year old registered Jersey owned by J. E. Wherrell, Riverside, recently completed a Register of Merit test with 12,966.5 pounds milk and 756.63 pounds butter in one year.

Grant A. Brown, El Monte, has been making some very creditable Register of Merit records with the registered Jerseys which he purchased at C. G. McFarland's sale at Tulare last year. Lottie of Willowwood, a junior two year old, made 8482.5 pounds milk and 517.37 pounds butter, while Jennie of Willowwood at just past five years made 8620.4 pounds milk and 522.36 pounds butter. The latest record in Mr. Brown's herd was made by the junior four year old Elodine of Willowwood, who finished her year with 11,316.6 pounds milk and 709.29 pounds butter. She is sired by Gertie's Son and out of the R. M. cow Elodine B, and qualifies in Class AA.

J. W. Coppini, Ferndale, was doing something during the past season besides winning a big share of the prize money in the California Dairy Cow Competition, as is indicated by the official reports of the American Jersey Cattle Club. Mr. Coppini is building up a herd of registered Jerseys and nine of his cows and heifers have completed good Register of Merit records this season. The nine include Marigold Olga Ann, 9153.3 pounds milk and 621.95 pounds butter; Olga Fern Smith, 9521.2 pounds milk and 679.27 pounds butter; Marigold of Ferndale, 8561.6 pounds milk and 639.76 pounds butter; Pride of California, a junior three year old, 7820 pounds milk and 601.11 pounds butter; Melia Olga Pogis, a senior two year old, 6993.0 pounds milk and 491.59 pounds butter; Bellina Darling, 8099.9 pounds milk and 565.23 pounds butter; Tormentor's Eastern Lily, 7379.7 pounds milk and 558.14 pounds butter; Gertie Olga of F, a junior four year old, 9921.8 pounds milk and 698.40 pounds butter; and Olga Darling, a junior three year old, 7692.2 pounds milk and 576.56 pounds butter.

WON SECOND ON HIS PIG

Written for California Cultivator
By Harold Taylor, San Bernardino

When I decided to enter the pig club contest, I wrote to the National Duroc-Jersey Record Association for the book they publish for boys and girls who belong to pig clubs. I studied this book to get the experiences of other boys and girls.

My pig was just an average one from a litter of ten pure bred pigs in my father's herd. When I started feeding my pig he weighed 72 pounds. I fed him entirely on prepared pig feed, with a little fresh cut alfalfa. He was fed twice a day.

I weighed him every 10 days and the lowest gain was 18 pounds in 10 days and the highest gain was 24 pounds. During the first 34 days he doubled his weight.

At the close of the contest he weighed 206 pounds, but before I took him to Riverside he weighed 214 pounds. Because he was with strange hogs during the fair he lost eight pounds and that represented about a week's feed cost, and for that reason my cost was increased.

My account shows that he ate 468 pounds of feed. The labor was figured at $2.50, and the total cost of feed and labor was $14.67.

A GREAT DUROC OPPORTUNITY

The big auction sale at Tagus Ranch, Tulare, December 10, 11, 12, 13, will offer a splendid opportunity to buy registered Duroc-Jersey hogs. There are 20 proven brood sows in the herd, headed by the famous boar California's Defender, who was junior champion at the Panama-Pacific International Exposition. There are in the herd over 150 gilts and boars, all out of the brood sows mentioned, and all sired by California's Defender.

SWEET CREAM RULE EXPLAINED

By a new rule speciyfing that cream sold for direct consumption shall contain no more than 20 per cent butterfat, the United States food administration seeks to limit the luxury use of this important fatty nutrient. The 20 per cent maximum restricts the sale of so-called "double" and "whipped cream" and other kinds prepared chiefly for special purposes not permissible in the face of present shortages of fats abroad. This does not affect nor in any way apply to cream used for butter making, ice cream making or other manufacturing purposes.

MOTOR TRUCK FOR TRANSPORTING LIVE STOCK

The use of motor trucks in transporting live stock to market has grown to such proportions at St. Joseph, Missouri, that the drive-in receipts at this point last year doubleed all previous records. For the nine months ending September 30, 75,211 hogs were handled, as compared with 33,286 for the same period in 1917. Points not conveniently located on railroads send practically all their live stock to market in this manner from distances of 75 miles, while even railroad shipping points within that radius utilize this method. Truck drivers have established a business of hauling live stock, making regular trips at certain stipulated charges, and on many trips pick up a return load, taking concentrated feeds, stock hogs, and cattle back to points having no railroad connection.

Brawley, Imperial County, has just shipped a car of wool to Boston.

You Can Make a Handsome Income by Trapping

Raw furs are extremely high now and the demand was never greater. Just think, even Skunks have sold this fall for over $9.75 each, and we know trappers who caught 19 Skunks in one night.

Wonderful Chance for Boys and Middle Aged Men

There's a splendid chance for you to make money by trapping; it's pleasant work. Don't worry if you've had no previous experience. Our beautiful 36-page book, "Trapping for Profit," tells all about trapping and handling of furs, so that even the beginner can have wonderful success trapping and get the highest market price for his catch.

The Book and price list are yours for a post card; they're absolutely free.

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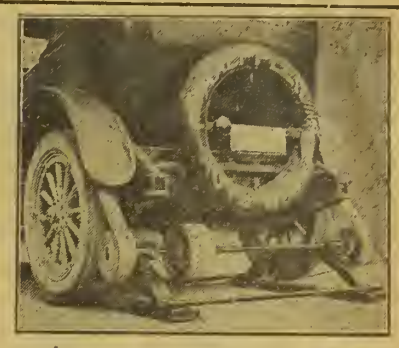

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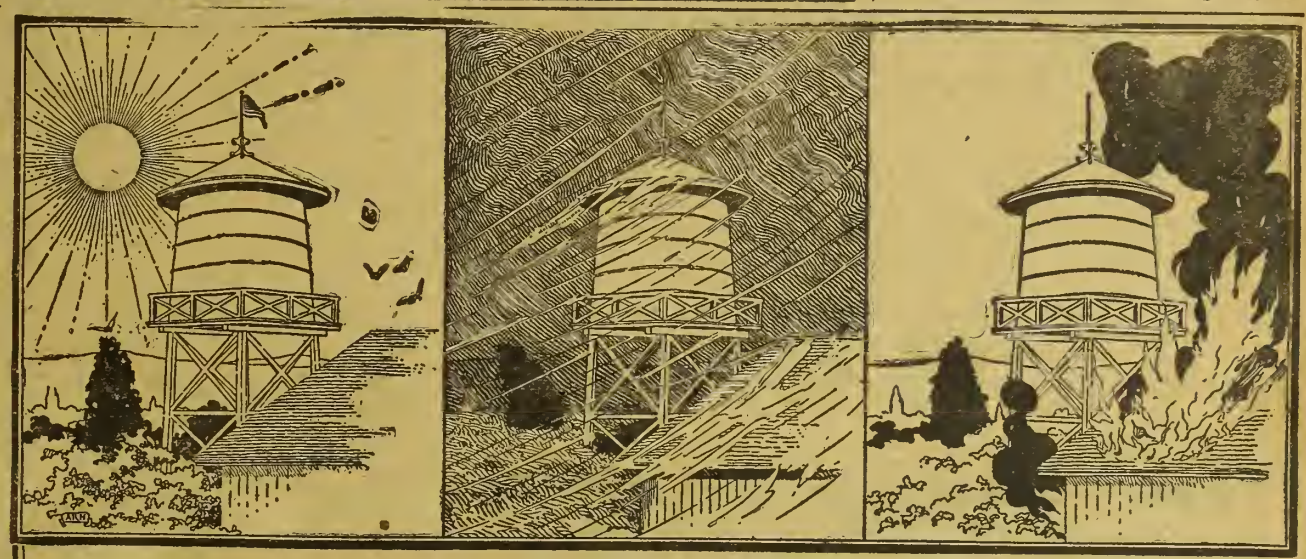

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withstand longer the effect of sun, rain and fire, give longer service, and cost less to install than any other.

For the money they cost they give more comfort, and more valuable service, than a like amount can buy in any other farm improvement.

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Write to us concerning your needs. Our engineers will suggest plans for your water system.

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The water to be delivered from _____

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If you have useless stump land, I want to PROVE to you on your own stumps—*30 days before you pay me a penny*—that ONE MAN with my famous Kirstin Stump Puller can pull big, little, green, rotten, low-cut, tap-rooted stumps, hedges, trees or brush. I want to convince you that this is the easiest, quickest and cheapest way to pull stumps.

I pulled one pine stump 8 ft. across top. My One-Man Kirstin pulls bigger stumps than I ever expected. *Mr. J. Erkkila, Calumet, Mich.*

My Kirstin pulls stumps up to 2 ft. blind maple 8 to 16 inches. Pulled tree 160 ft. high and 22 inches at base, in 15 minutes. *A. H. Jeffery, Goble, Oregon.*

My Kirstin pulled stumps we thought it could not pull. *Mr. E. A. Buckley, Bay Springs, Miss.*

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After 30 days trial—if satisfied, keep puller. If not pleased, send it back at my expense. *You don't risk a penny.* Four easy ways to pay. **Single! Double! Triple Power!**

Kirstin One-Man Stump Puller Single, Double, Triple Power!

Weighs less—costs less—yet has greater *speed, strength, power* and *lasts longer!* Clears one acre from one anchor! Easily moved around field. A few *pounds* pull or push on handle exerts *tons* on stump—due to wonderful leverage principle. 3-year guarantee against breakage!

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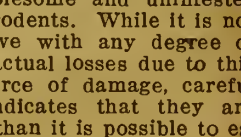
Tells how one man pulls stubborn stumps in few minutes at low cost. Explains all about different speeds. Also patented quick "take up" for slack cable. Describes Kirstin one man Clutch Model; Kirstin One Man Drum Model; and Kirstin Horse Power Model. Get the book and Special Agents' Offer. Shipment from nearest distributing point saves time and freight. Write today.



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APPLY IN FALL. Almost every soil is deficient in lime, sulphates. Supply these with Gypsum. Mix with manure to hold valuable ammonia. Gypsum Book Free. Consolidated Pac. Cement-Plaster Co., 614 San Fernando Bldg., Los Angeles.

Significant Wheat Yields from Illinois

Wheat threshing has begun on the University of Illinois experiment fields. The acompanying tahle of yields from the Oblong field in Crawford County, is reported by Harrison Fahrnkopf, who is superintendent of several soil experiment fields, including that at Oblong.

Soil treatment applied—	Bushels
None (average of three tests)	8.8
Farm manure	15.8
Manure and limestone	22.7
Manure, limestone, rock phosphate	33.4
Crop residues	13.2
Residues and limestone	30.5
Residues, limestone, rock phosphate	36.1
Residues, limestone, phosphate kainit	38.8

These records show that as an average the yields of wheat were increased nearly six bushels per acre by the organic manures, about 12 bushels more by limestone and eight bushels in addition by phosphate. In permanent systems of soil improvement, with ground limestone, fine ground raw rock phosphate, and home grown manures, the average yield was nearly 35 bushels per acre, or about four times the yield from untreated land, which of itself produced less than nine bushels of wheat.

The Oblong experiment field is located on the common prairie soil of southern Illinois, and these systems of practical, permanent soil improvement are equally applicable to millions of acres of similar land. Why expend labor to farm forty acres when the same amount of wheat may be grown on ten acres?—Cyril G. Hopkins, University of Illinois.

To the Farmers of America:

Three million American boys, on the battlefields in France, in the cantonments on this side, and on our great ships everywhere, are fighting the battle for democracy.

Back of them is another army—the splendid, untiring men and women on the farms of America, who have taken up the additional burden laid upon them by the absence of many of their boys, and by their toil and sacrifice have produced the crops that today are helping to feed the allied world. From you, who are the soldiers of that army, every patriotic call has had an unhesitating and united response.

Today in the name of the President of the United States another call is sent to you on behalf of your sons and brothers. They are far away from their own homes; yet through the generosity of the American people the influence of the homes which they have left still follows them. Seven great organizations have taken it upon themselves to do for the boys in camp and at the front the things which every parent would wish to do for them if he could.

These seven agencies are the Y. M. C. A., Y. W .C. A., National Catholic War Council, Jewish Welfare Board, War Camp Community Service, American Library Association, and the Salvation Army. Together these splendid societies represent every one of the best elements in our American life. Their huts are the soldier's church, his college, his library, his club, his theatre, and his gymnasium.

To provide this comfort; to make the American home follow the American flag, requires money in large amounts. These seven agencies will need more than one hundred and seventy millions to push their work forward through the forthcoming months. And, because their work is done in the same spirit, and for the same great end, they have wisely agreed to make their appeal to the public not separately but together.

That appeal, which will be made of you in the week of November 11-18, will offer the American people one of the most splendid opportunities of the war to signal across the seas their united support of the boys who are fighting there. The cause is great; the total amount asked for is great; but not greater than the patriotism of the American farmers. Every house that flies a Service flag will have a special interest in the success of that campaign. For every dollar means cheer and comfort to the son of such a house.

On behalf of the administration I send you this great call. But more particularly on behalf of the boys themselves. In the chill and damp of those French villages they are waiting for your answer—waiting for you to say to them: "No matter how great the sum, we promise that you shall have the comforts of life over there. The success of this United War Work Campaign is the proof that we are standing shoulder to shoulder behind you."—D. F. Houston, Secretary of Agriculture.

Safeguard Stored Products

By G. H. Hecke, State Commissioner of Horticulture

What would it profit California or the nation if the farmers produce bumper crops and feed them to the weevils and rodents in public or private warehouses? This is the question which is squarely up to the farmer! Answering the emergency call for increased crop production California is preparing to harvest one of the greatest yields in the history of the state!

Now in the life history of the average crop there are three important phases, between the time it is planted and the time it reaches the consumer: Planting, care and nourishment and harvesting and warehousing.

The first two phases are accomplished hy the expenditure of much money and labor—no one knows as well as does the farmer—but unless the third phase—warehousing, is successfully accomplished — all the money, and labor, and effort have been wasted!

Why should any package of cereal, of rice or of dried fruit, bearing the imprint of the state of California, advertising that it was grown and packed in California, be condemned and destroyed because it was infested with filthy moths, worms or weevils?

This is due principally to negligence! Whose negligence? Well, you might use the legal phrase, and say it was contributory negligence! Is it the fault of the state which does not regulate the sanitation of public and private warehouses and packinghouses? Any army officer who stored his troop's food in a filthy warehouse would lose his shoulder-straps —and that quickly! These emergency rations are war munitions! Is it the fault of the wholesaler and retailer, who knowingly sell an article which they cannot guarantee? Is it the fault of the careless consumer, who persists in patronizing an article, that he knows falls short of the accepted standard? Thus it looks like we are all somewhat negligent!

Especially under stress of the present extraordinary conditions no great quantity of perishable food materials should be warehoused until the warehousing facilities are guaranteed to be clean, wholesome and uninfested by insects or rodents. While it is not possible to give with any degree of accuracy the actual losses due to this pernicious source of damage, careful observation indicates that they are much greater than it is possible to estimate.

The approximate loss to the people of the United States through noxious insects and plant diseases is stated variously at two thousand million dollars per annum—and a large portion is debited against "stored product insects"!

Now stop and think—those losses are, in the main preventable!

There are in California many insects which damage stored products, and their destructiveness is twofold—

since they render unwholesome and unfit for food all that portion which they do not actually devour!

Among the insect pests most destructive to stored flour, meal, cereals and grains are the Indian-meal moth, the Mediterranean flour moth, the meal snout moth, the fig moth, the saw-toothed grain beetle, the confused flour beetle, the granary weevil, the rice weevil, the common bean weevil, the horse-bean weevil and many other weevils and moths and beetles of economic importance.

It is expected, that with the exercise of care and cleanliness within the next 12 months, to show a marked decrease in this class of damage, not only because of the requirements demanded by war activities—not only because of our state wide pride in "Better Products", but also because it makes for good practice and in the end it makes for satisfaction to every one and will become a financial asset instead of a loss!

Have you any suspicious insects in your mills, warehouses, storehouses, packinghouses? Don't guess at them! Send them to your state commissioner of horticulture at Sacramento, and he will have them identified for you at the earliest possible moment and advise you how to control them.

The Fumigation of Granaries

By A. W. Morrill

AT this season stored grain is frequently severely damaged by several grain beetles and weevils, also a species of moth, which insects not only consume the substance of the grain but in some cases give it a flavor which is objectionable to stock. The report of the Arizona commission of agriculture and horticulture includes a brief account of the damage done by insects at a farm granary near Phoenix in the fall of 1917, together with an account of the methods employed in fumigating with carbon bisulfid. This circular is prepared to give information concerning this method of control so that it may be more generally used by farmers and seedsmen in Arizona.

Carbon bisulfid is a clear liquid which when exposed evaporates or volatilizes very rapidly, forming a poisonous gas. This gas is about two and a half times as heavy as air. When mixed with certain proportions of air it is highly inflammable and explosive. On account of its penetrative powers carbon bisulfid gas is very effective against insects in stored grains and other food products. It is commonly called "high life" and is well known in some sections on account of its use against prairie dogs. The chemically pure carbon bisulfid does not have an objectionable odor, but the commercial grade manufactured particularly for the destruction of insects and rodents has a disagreeable odor owing to hydrogen sulfid which it contains.

In fumigating a granary the first step is to make the building as tight as possible. The bottom can usually be made reasonably tight by throwing dirt all around the sides and packing it down with a shovel. Strips of heavy brown paper should be pasted over all cracks and openings in the side walls. It is, as a rule, best to employ a professional paper hanger to do this. One door should be left open as an exit, but everything should be in readiness for prompt work as soon as the operators have finished their work inside. Wet newspapers are useful in preparing a building for fumigation, especially in closing openings around sliding doors. The wet paper should be tightly rammed into the openings with a stick. If the roof is provided with a ventilator one or more wagon or hay stack covers may be thrown over it in order to check the circulation of air. All openings should be covered for as far as possible above the highest sack of grain, but a margin of three or four feet proved sufficient in one instance where it was impractical to close a corrugated iron building tightly at the eaves. Sometimes it may be necessary to rearrange the sacks of grain in order to have all of it well below the eaves.

The exposure should start preferably about midday, since insects are easiest to poison when most active, and up to a certain point they are most active when the temperature is highest. Do not fumigate when the temperature is below 70 degrees. The granary should be kept closed for twenty-four hours, by which time much of the gas will have escaped.

Carbon bisulfid will not injure the feeding value or the germination of grains and seeds. A convenient method of exposing the liquid in granaries therefore is to open the cans and when everything is ready turn them upside down so that the contents can run out onto the sacks of grain. The cans should first be placed at suitable intervals on top of the sacked grain and arrangements made between the men as to the part each will do in order to turn over all the cans, get out of the building and close the exit, as heretofore advised, as quickly as possible.

Small lots of grain, seed or other products can be fumigated in watertight barrels or boxes closed, after emptying the dose of carbon bisulfid, by tying tightly over the top a double thickness of heavy wrapping paper or two or three thicknesses of tight canvas. Paper is more nearly gas tight than canvas and is to be preferred.

Two gallons, or approximately 20 pounds, of carbon bisulfid to 1000 cubic feet of space, with the outdoor temperature slightly over 90 degrees at the beginning of the exposure, proved a satisfactory dosage in fumigating the granary heretofore mentioned. This building, as has been stated, was not closed tightly at the eaves. With tight storage rooms or granaries 15 or even 10 pounds of carbon bisulfid to each 1000 cubic feet of space is sufficient. With tight barrels or small approximately gas tight bins one fluid ounce of the liquid to six cubic feet of space might be sufficient, but for the fact that the rate of leakage is proportionally much greater in small compartments or containers than in large ones. In other words, a barrel or box must be much tighter in proportion than a large granary in order to secure equivalent results with a fumigant at a given dosage rate. It is advisable, therefore, when fumigating small quantities of materials in barrels or boxes, to use proportionally heavier dosage unless it is certain that the container is approximately gas tight. One ounce of carbon bisulfid to two cubic feet of space should be sufficient with a reasonably tight container.

Attention has been called to the fact that carbon bisufid gas when mixed with air in the right proportion is highly inflammable and explosive. The same care should be used in handling carbon bisulfid as is used ordinarily in handling gasoline. Smoking must be avoided and lamps, lanterns, matches or electric lights must not be used in a building after the exposure is started. Carbon bisulfid is not a quick acting or violent poison like hydrocyanic acid gas, but it is advisable for the operators to hold the breath after starting to expose the liquid until they have reached the open air. A building, bin, barrel or box which is being fumigated with carbon bisulfid or any other poisonous gas should be conspicuously labeled in order to avoid accidents. After the end of the exposure the place fumigated should be ventilated by opening doors or removing covers. The odor of carbon bisulfid will remain for some hours or even days after the exposure, but after an hour or two of ventilation the gas will not remain in poisonous quantities.

The normal price of carbon bisulfid in five-gallon cans is about $1.00 a gallon, not counting the freight from the factory. Large quantities are quoted at the factory in drums at as low as 6 cents a pound. Everything considered, the expense of fumigating granaries, grain bins and small lots of grains and seeds with carbon bisulfid is insignificant when compared with the damage which the numerous insect pests destructive to grains and other stored products are capable of doing.

The United States department of agriculture has published a Farmers' Bulletin (No. 799) which gives detailed information in regard to the use of carbon bisulfid as an insecticide. Any farmer or seedsman who has suffered losses from granary and seed pests should secure a copy of this bulletin, which will be supplied without expense to anyone who applies to the United States department of agriculture directly or through his representative or United States senator.

There is a difference between notoriety and merit. A thousand dollars' worth of roses will barely fill a room with perfume, but with a dollar's worth of fried onions you can scent up a whole town.

The food program is a fighting program and every fighter counts.

Key to Plan View

1—One-Piece Main Frame—Holds all shafts, bearings and gears in proper alignment.

2—Motor Set Crosswise—Eliminates bevel gears, worm friction or chain drive.

3—Hyatt Roller Bearings at all important places.

4—Cut Steel Gearing in transmission.

5—All Cut Steel Gearing between crank shaft and gear box.

6—All Cut Steel Helical Timing Gears.

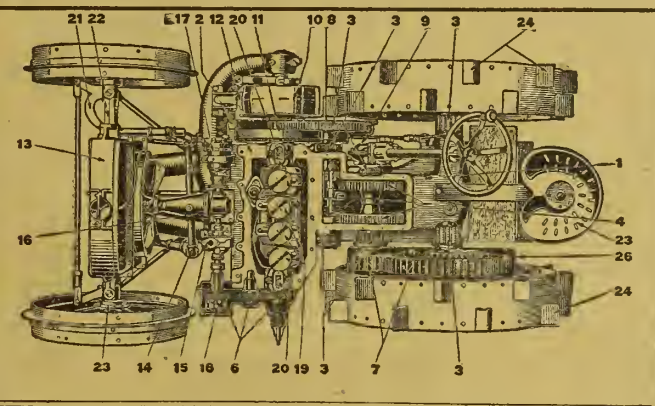
7—Forged Cut Steel Master Gear and Bull Pinion with differential (fully enclosed).

8—Oil-Tight Housing for all gears between crank shaft and transmission.

9—Worm and Sector Steering Gear, enclosed.

10—Clutch Pulley on crank shaft.

11—Fly Wheel—Next to main bearing (normal speed 1050 R. P. M.)



Key to Plan View

12—Brake for belt or road work.

13—Cast Frame, 5-piece, Army truck type, non-clogging Radiator.

14—Sylphon Thermostat.

15—Centrifugal Pump.

16—Spiral Gear-Driven Fan; gears enclosed.

17—Dust Proof High Tension Magneto.

18—Speed Governor, enclosed.

19—Pistons—Diameter 3¾ in. Stroke 5 in.

20—Main Crank Bearings, 2¾ x 4½.

21—Steel Steering Knuckles.

22—Drop Forged Front Axle.

23—Dust Proof Hubs.

24—Detachable Tire Lugs—other styles furnished if ordered.

25—Spring Seat.

26—Dust Proof Housing for final drive.

Study This Chassis

of the Case 10-18 Kerosene Tractor

ABOVE we show a plan view of the Case 10-18, with an explanation of the details. Study this chassis—note its features.

In many ways, you will find the Case 10-18 far in advance of today's usual offerings. For instance, it is the first to offer a one-piece main frame with a four-cylinder motor, mounted cross-wise. This is merely one of the dozens of betterments. The one-piece frame casting constitutes a dust-proof housing for the rear axle, bull pinion shaft, transmission and the bearings for these parts.

This type of construction brings rigidity, reducing vibration, preventing disalignment. Power is conserved, while we multiply strength.

The belt pulley is mounted on engine crank shaft, doing away with bevel gears. It is part of the tractor—not an extra-cost accessory.

The Case Sylphon Thermostat insures complete combustion of gasoline or kerosene, and prevents raw fuel from passing by the pistons and diluting oil in the crank case.

The Radiator has a cast frame. The Core is copper—fin and tube non-clogging type.

A Case air-washer prevents grit or dust from getting into the cylinders.

These are but a few of the greatest advancements in tractor history. Case offers you today, NOW, what others will attempt later on.

The Case 10-18 is rated according to the conservative Case policy.

It develops nearly 14 horsepower on the drawbar and about 24 horsepower on the pulley. Thus we insure abundant reserve power.

Our booklet and specifications point out dozens of other advancements, all of which demand your consideration before you buy.

Write to us today for a copy. Or visit a Case dealer.

CASE KEROSENE TRACTORS

J. I. Case Threshing Machine Company, Inc.
Founded 1842
1413 Erie St., Racine, Wis., U. S. A.

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FARM & FOREST REALTY CO.,
WATSONVILLE, CAL.

SNOHOMISH COUNTY, WASH. FARM LANDS. The greatest proposition on the market for the man who wants a farm; 12,000 acres to select from, 3½ miles salt water front, 20 miles of Beautiful Lake Shore, good towns, railways, steam boats, factories, mills, schools, churches, paved roads; where the largest profits are made, where the great variety of crops and wonderful productive climate make it the most productive farm section of America. Good lands in good localities as low as $25 to $35 per acre; 10 yearly payments; send for maps and literature to the BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

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Boar Pigs—3, 5 and 6 months old, from 650 pound prize winning sows. We will sell nothing that we wouldn't use ourselves,
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For Sale — One pure blood imported French Percheron stallion, also few young work horses. L. E. Stockton, Ramona.

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Fall Chicks For Sale—400,000 S. C. White Leghorn chicks from free range Hoganized stock only, for delivery from July to December, at very reasonable prices. Fall chicks are most profitable—broilers in ten weeks, pullets lay at five months. We guarantee safe delivery of all chicks to destination. Shipped safely anywhere West of the Rockies. No money in advance, pay on delivery. Special prices on 500 and 1000 lots. Finest hatchery in the world. Established over twenty years. Further information write Must Hatch Incubator Company, 424 Seventh Street, Petaluma, California.

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Wanted—Work on farm or ranch, by man 30 years of age, married, has wife and three children. Was raised on farm, has spent the last five years in the service of the government. Would like house and other privileges furnished. Must be a permanent position. If you need a man, write me. I can deliver the goods. Address Farmer, 332 Auburn Ave., Middletown, Ohio.

POSITION AS MANAGER WANTED WANTED—A chance to develop and manage a new citrus ranch, or take hold of acreage of young trees, where first class, scientific and efficient management is wanted. Wide range of experience, proven ability and the very best of references. Free after November 20th. For appointment address Box R, California.

Young man, well educated, with years of experience in all lines of commercial work, stenography, etc., offers his services in exchange for room and board where conditions are conducive to good health, in order to thoroughly recover from recent accident. Excellent references upon application. Address P. O. Box 501, Portland, Ore.

Wanted — One or two thousand very choice Umbrella trees for this season's trade. Imperial Valley Nursery, El Centro.

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Bronze Turkeys—Mammoth Bronze Toms and hens for sale. Place orders now before prices advance. Also Collie dogs for herding. John G. Mee, St. Helena.

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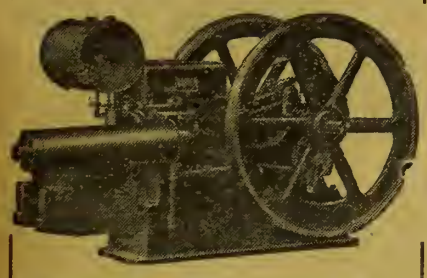
Witte Irrigating Engines



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HOW EDITORS GET RICH

A man tells of a country editor who started out poor 20 years ago and has retired with the comfortable fortune of $50,000. This money was acquired through industry, economy, conscientious efforts to give full value, indomitable perserverance and the death of an uncle who left the editor $49,999.50. —Kansas City Times.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Unsigned communications receive no attention.

Sick Cow

I have a six year old Jersey cow that is falling off in flesh rapidly from loss of appetite. She eats and drinks very little and the best of alfalfa hay or green alfalfa will not tempt her to eat much. Have given her epsom salts several times, about three tablespoons at a time, and have also given her tablespoon doses of cow cure, but nothing seems to do her any good. Her kidneys and bowels are acting all right. Her whole appearance is rather dull, but her eyes are still bright. She seems to have some trouble in remasticating her food and is groaning occasionally as if she were bloated. What would you advise doing for her?—Subscriber, Lancaster.

The fact that the cow grunts occasionally makes it a very serious case. That with the other symptoms you describe indicates that she has inflammation of the third stomach or has swallowed a piece of wire or a nail and that it has penetrated the walls of the stomach and there is no telling what organ it is headed for. Would advise giving her one pound of epsom salts, half a pound of common salt, two drams of powdered nux vomica and two drams of powdered ginger. Dissolve all in two quarts of hot water and when cool give all at one dose as a drench. If this seems to give any relief then in 36 hours give her one quart of raw linseed oil, two ounces of turpentine, four drams of aloin and two drams of powdered nux vomica. Mix and give it all at one dose. If she continues to improve give her a tablespoon of baking soda in a little feed twice a day. Do not feed much bran nor ground feed of any kind but encourage her to eat dry hay that will form a cud. Give her plenty of water. If she has swallowed something that will not pass, of course this will do no good, but if the trouble is caused by some stoppage the giving of the physic may relieve her.

Diabetes

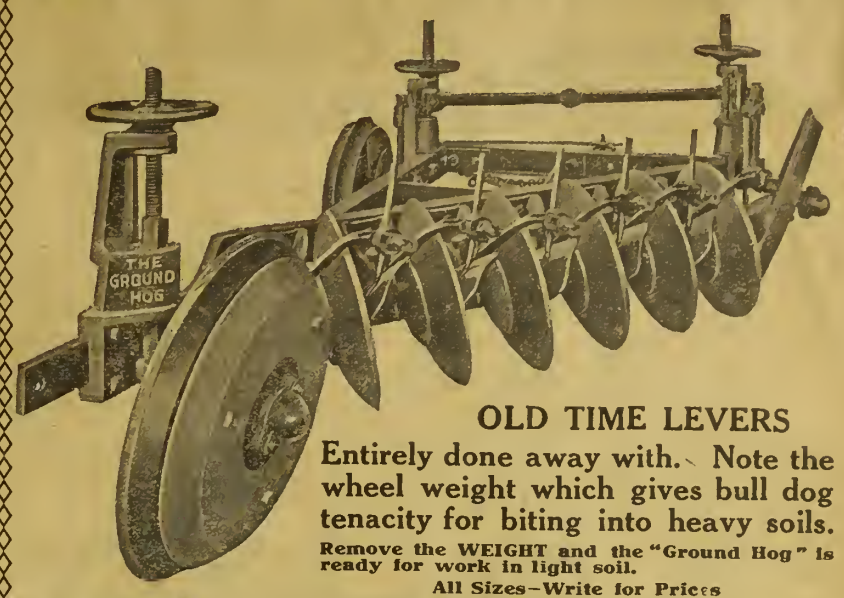
Please tell me what to do for my three year old colt. He is bothered with frequent urination and the color of the water is white.—Subscriber, Palmdale.

The symptoms are those of diabetes. It is a disease that affects the kidneys and is quite serious. If neglected it becomes chronic and weakens the animal very much. The colt should not be worked, as that aggravates the disease. Here is the remedy: Two ounces of the iodide of potash dissolved in one pint of water. Give half an ounce of the solution in the drinking water or on a little feed morning and evening. Your druggist will give you a half ounce bottle for a measure. Also get five pounds of ground flaxseed and once a day put a a gallon of boiling water. Let it stand for one hour, then fill the bucket with handful in a clean bucket and pour in cold water and let the colt drink from it. The flaxseed tea will sooth the kidneys and assist the iodine treatment. You may notice this trouble coming back occasionally but a few doses of the remedy given right in the start will stop it and the colt will probably recover completely in a short time.

SMITH BROTHERS TO DISTRIBUTE CLEVELANDS

Smith Brothers, 1616 South Figuroa Street, Los Angeles, have been made Southern California distributors for ten counties for the Cleveland tractor. It is the plan of the firm to secure additional sales and service stations at once and give a service to the users of Cleveland tractors that will enable every user to be within "30 minutes of service," in their territory.

HERE IT IS The New Model "GROUND HOG"



OLD TIME LEVERS

Entirely done away with. Note the wheel weight which gives bull dog tenacity for biting into heavy soils.

Remove the WEIGHT and the "Ground Hog" is ready for work in light soil.

All Sizes—Write for Prices

Spalding-Robbins Disc Plow Co.
625 Market St. San Francisco, Cal.

The Farmer's Concrete Mixer

Sheldon Batch Type Mixer—Prices $11.50 to $120.00

The Sheldon was designed especially for the Ranch or Farm. Highly praised by users all over the Pacific Coast. Farmers everywhere call it the ideal mixer. Small enough to be easily moved—big enough to keep six men busy. Low in price. Build your own concrete irrigation ditches, laterals, tanks, troughs, floors, foundations, walks, buildings, etc., with a Sheldon Batch Type Concrete Mixer. To make it easy for you to get a Sheldon Mixer we now have a

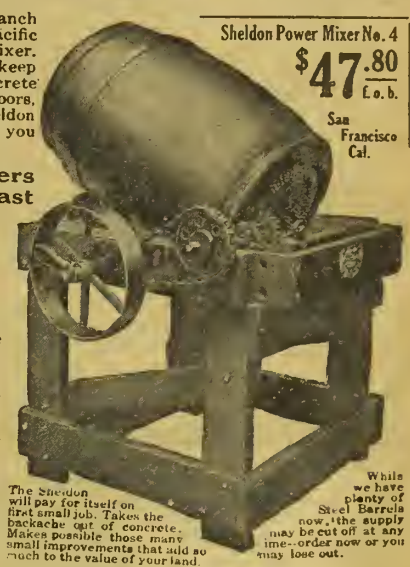
Sheldon Power Mixer No. 4
$47.80 f. o. b. San Francisco Cal.

Big Stock of No. 4 Sheldon Mixers (like the picture) at the Pacific Coast Warehouse, and we can make

Quick Shipment From San Francisco

We paid the freight to San Francisco—you save time and freight expense if you buy now. Shipped set up ready for instant use. Sold direct to you on strong guarantee. Thirty days trial privilege. No other like it. Patented. Mixes 3 cubic feet a minute. One man can operate it, but it will keep six men busy. Continuous chain drive, tilting dump, clutch pulley, 13-gauge steel barrel, all parts guaranteed. Does work equal to $400 mixers. Write for catalog now—shows all styles—hand and power, on legs, skids, and wheels, with or without engine.

Remember we paid the freight to San Francisco Send your order or request for catalog direct to the factory. Write today.



The Sheldon will pay for itself on first small job. Takes the backache out of concrete. Makes possible those many small improvements that add so much to the value of your land.

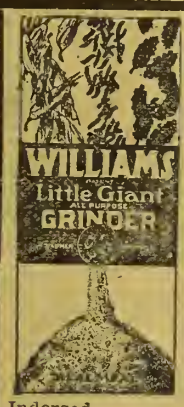
While we have plenty of Steel Barrels now, the supply may be cut off at any time—order now or you may lose out.

Sheldon Manufacturing Company
Box 797 Nehawka, Neb.

Grind Your Own Feed For Livestock and Poultry

USE THE

Little Giant Feed Mill



Indorsed By the Food Administration.

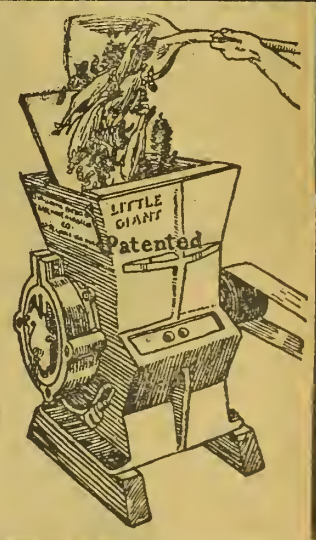
Grinds feed at LESS COST than the cost of buying it ground.

Provides FRESH, FULL-FLAVORED FEED in a jiffy.

And the SAVINGS will soon pay for the LITTLE GIANT.

See at the LIBERTY FAIR and at our Showroom.

Send for "Little Giant Bulletin;" it contains interesting information.



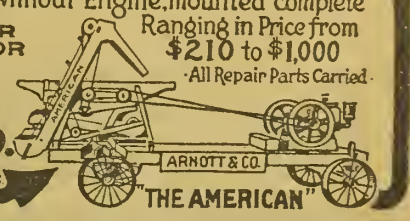
Collins & Webb, Inc.
Machinery Dealers
412 East Third St. Los Angeles

BEAN THRESHERS THE TWO STANDARDS
Built Especially for California Conditions

THE FARQUHAR VIBRATOR SEPARATOR

Past the Experimental Stage
Eleven different models, with or without Engine, mounted complete
Ranging in Price from $210 to $1,000
All Repair Parts Carried

Guaranteed by The House of ARNOTT
Ask The Grower Who Owns One
Write for Folder, Specifications, Prices Etc.



QUALITY ARNOTT GUARANTEED
ARNOTT & CO.
BEAN THRESHER HEADQUARTERS
112-118 So. Los Angeles St. Los Angeles

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

GREATER STRENGTH
Fewer Spoonfuls
BIGGER SAVINGS

The value of baking powder is based on its *leavening strength.* You can't judge it by the size of the can—or by the *amount* you get for your money. You must estimate it by the amount of baking powder *used* in each baking and the *results* you get.

CALUMET

is the greatest value ever offered in Baking Powder—it has greater raising *"force"*—it *goes* further than most of the other brands. You use only a rounded or heaping teaspoonful where others call for two teaspoonfuls or more.

But Baking Powder is not all you'll save when using Calumet. You save baking *materials.* Calumet *never* fails. The last *level* teaspoonful is as powerful as the *first.* Calumet is perfectly manufactured—*keeps* perfectly—and is moderate in price.

You save when you buy it—You save when you use it

One trial will satisfy you of these facts—will demonstrate beyond doubt that "Calumet spells economy."

Your grocer sells it on a guarantee of money back if you are not pleased with results.

Calumet contains only such ingredients as have been approved officially by the U. S. Food Authorities.

HIGHEST QUALITY AWARDS

The home fire

Perfection Oil Heater stands guard against dampness and chill in the home. Easily carried from room to room—upstairs or down—anywhere heat is needed.

Lights at the touch of a match. Gives long hours of cozy, comfortable warmth on one filling with Pearl Oil—the ever-obtainable fuel.

No smoke or odor. Economical.

Buy Perfection Oil Heater today. Dealers everywhere.

HEAT WITH PEARL OIL

Standard Oil Co. (California)

PERFECTION OIL HEATER

When writing advertisers, mention The Cultivator.

Household Department

ELSINORE

Written for California Cultivator
By C. A. McDonald

The clouds are drifting overhead, with sunshine in between;
The trees that line the city's streets are clothed in living green.
The gentle zephyrs bend their tops and twist the limbs in glee,
And hie away to other lands across the deep blue sea.
The birdies hide within the tops where they have raised their young,
And in the morning sing to us their reveille of song.
The mountain range along the coast keeps back the ocean storm,
While nature tries to shelter us and keep us from all harm.
Lake Elsinore, that perfect gem, lies cradled 'tween the hills,
With healing waters from the gods, a cure for every ill.
And so, we have a heaven on earth, a place not made by hands,
A spot of healthful happiness not found in other lands.
'Tis here the farmerettes first tried their hands at farming out,
And ploughed the soil and tilled the lands and drove the teams about.
They hoed tomatoes, picked the worms, out in the broiling sun,
And saved the crops and helped our boys in victories they won.
'Tis here the cripples come, and sick, with their rheumatic pain,
And none that ever came in faith, were known to come in vain.
But time is swiftly passing by, all things must have an end,
And in eternity at last, another life we'll spend.
But when we wake in that new day, upon that golden shore,
Well find we've been home all the time,—at home in Elsinore.

A STRANGE OCCURRENCE

Written for California Cultivator
By Ida M. Blake

MR. MORRIS closed his desk with a bang.

"I'm going out, Miss Gordon, and may not be back until late. Send those letters I gave you, then run over to Smith's with that order. Leave the door closed but unlatched so that if anyone comes they can wait until you return. Tell Jack to see that the radiator is fixed so it won't leak, and no fooling about the job this time."

With these instructions he went out, leaving Miss Gordon alone. She finished her letters and then left the office as her employer had told her. When going through the hall to the elevator, two men passed and gave her such a scrutinizing glance that she shuddered but tried to think that it was only imagination that made her suspect them. So she left the building.

It was several blocks to Smith's, but the air was clear and cool on that January day and the few minutes consumed in walking she thought would surely do no harm, so she decided to walk. But the unexpected occurred and she was gone much longer than she had planned.

Hurrying back to the building she returned to the office, passed the same two men loitering in the hall, and entered the office. Finding no one there she went out again without taking off her hat and ran down stairs to tell the janitor about the radiator. Not many minutes were consumed on this errand, but when she returned to the office again, lo and behold, the door was locked.

"Why, that is strange," she said to herself, "I'm sure I didn't lock that door."

Her own pass key soon admitted her to the room, but—

At Mr. Morris' desk sat one of the men whom she had passed in the hall. The curtain at his side was drawn down, a most unnecessary move, for the sun never reached those windows. Miss Gordon had never known it to be done before.

Miss Gordon may have been a bit nervous or somewhat anxious, but she held her ground and self control and left the door wide open. As it happened, there was no one in the offices either side of this room, so she felt precaution would be prudence.

Very calmly she removed her hat and gloves and said: "Did you wish to see Mr. Morris?"

"Why, yes," the man replied, "but I'm in somewhat of a hurry, but I'm very anxious to see him."

"Well, he is not here and I don't know when he will return. Will you wait?"

"No, I think not. I'll write a note."

After making several attempts at the note writing, and tearing each one up, he remarked: "No, I'll not bother, but will drop in later."

"Leave your name, please, and I will tell Mr. Morris you called."

"Mr. Wright, and tell him I have those orders he wanted me to get for him. Good afternoon." And he left the room.

All during this conversation Miss Gordon never took her eyes from his face, and she stood with her back to the desk, grasping in one hand a heavy paper weight. It was not many

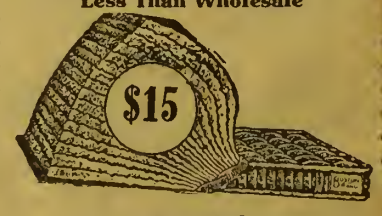
Oh Joy! More Time to Knit

And I'm Through With That Everlasting Rub! Rub! Rub!

I've found a new way to wash clothes—by the aid of that dear Cocoa Naptha Soap.

First of all I wet the clothes thoroly and rub them well with Cocoa Naptha Soap, particularly the soiled places. Then let them stand 30 minutes or over night and presto!—the dirt comes out like magic with just the littlest bit of rubbing, and they're ready for rinsing, bluing, and hanging out. No boiling mind you; I don't even use hot water. It is the soap that does the work—so be sure you get the genuine Cocoa Naptha made by Los Angeles Soap Co. It contains pure cocoanut oil and is the biggest cake of laundry soap for the least money I've ever found.

Don't Pay Retail Prices
Buy Direct From Manufacturer Less Than Wholesale



Guaranteed Pure White Fleeced STAPLE COTTON Mattress

Large size Imperial edge non-stitch. Art Ticking with side straps. In fact a Mattress of Superior Quality.
No Linters, Cotton Motes, or other Inferior Substitute Filling. Guaranteed 100 per cent Staple Cotton. Send for Price List.

Boston Bedding Co.
2100-6 Maple Ave. Los Angeles

RO-SAN Indoor Closet

The original chemical closet. More comfortable, healthful, convenient. Takes the place of all outdoor toilets, where germs breed. Be ready for the long, cold winter. Have a warm, sanitary, comfortable, odorless toilet right in the house anywhere you want it. Don't go out in the cold. A boon to invalids.

GUARANTEED ODORLESS

The germs are killed by a chemical in water in the container. Empty once a month as easy as ashes. Closet guaranteed. Thirty days' trial. Ask for catalog and price.

ROWE SANITARY MFG. CO.
511 St., Detroit, Mich.

Ask about Ro-San Washstand—Hot and Cold Running Water Without Plumbing.

seconds after he had left when he returned and asked what the telephone number was, at the same time sending a searching glance around the room.

As soon as he had left again Miss Gordon looked around the room and through her desk, which she had left open during her absence. Nothing seemed disturbed. Walking over to Mr. Morris' desk she discovered in the chair where the stranger had been sitting, a skeleton pass key!

CHRISTMAS PACKAGES FOR SOLDIERS AND SAILORS

The war department is desirous that each man serving in the American Expeditionary Forces in Europe shall receive a remembrance from home at Christmas time, and advises that because of transportation and distribution difficulties but one parcel of standard size and weight can be sent to each. To this end arrangements have been made with the war department whereby Christmas parcels may be mailed to members of the American Expeditionary Forces in Europe under the following conditions:

1. Each soldier or other member of the American Expeditionary Forces in Europe will be allowed to receive one Christmas parcel for which purpose he will be furnished, through army channels, a "Christmas Parcel Label" bearing the correct name and address of the soldier or member and also the name of the person designated to mail the parcel. The labels will be prepared to serve as address labels for the parcels. The label furnished each soldier or other member of the American Expeditionary Forces will be sent by him to the person who is to mail the Christmas parcel. No Christmas parcel for members of the Expeditionary Forces in Europe will be accepted for transmission without such label.

2. All Christmas parcels must be of standard size, three inches by four inches by nine inches, and shall not exceed three pounds in weight, for which purpose cartons of the size prescribed will be distributed through the local Red Cross chapters throughout the country. No person will be furnished a carton except upon presentation of a "Christmas Parcel Label" received from abroad.

3. The parcels must contain no prohibited or unmailable articles. Perishable food products are not permitted.

4. After the cartons have been filled by the persons who receive them, they shall be returned to a Red Cross receiving station, where inspectors appointed by the Red Cross will carefully examine each parcel and supervise its wrapping and the affixing of the "Christmas Parcel Label" and the necessary postage stamps, the latter to be furnished by the sender of the parcel. When the parcels have thus been packed and wrapped and otherwise prepared for transmission, the Red Cross will affix to each parcel a certificate in the form of a seal showing that the parcel has been inspected and contains no prohibited or unmailable matter. Such certificates will be accepted by the postal service and army authorities as evidence that the parcels conform to the conditions prescribed and obviate the necessity of subsequent examination. The parcels must be left at the Red Cross receiving stations, which will deposit them in the mails for dispatch.

5. Christmas parcels must bear the name and address of the sender and will be addressed substantially as follows:

"Christmas Box Department, Port of Embarkation, Hoboken, New Jersey.
For.....
Organization.....
American Expeditionary Forces."

Parcels so addressed will be chargeable with postage at fourth class or parcel post zone rate applicable between the office where mailed and Hoboken, New Jersey, to be prepaid by stamps affixed.

6. Parcels may bear inscription such as "Please do not open until Christmas," "Merry Christmas," "Happy New Year," "With Best Wishes," and the like.

7. In order to assure the arrival of Christmas parcels abroad and the delivery to the addressees by Christmas all such parcels must be mailed on or before November 20, 1918.

The foregoing does not in any way change the instructions heretofore issued regarding the acceptance of parcels up to seven pounds in weight for members of the American Expeditionary Forces in Europe which contain articles sent in response to the written request of a member approved by his regimental commander or other officer authorized to approve such requests.

For Men in the Naval Service

The navy department has advised that parcels intended for officers and men on United States naval vessels in home waters and abroad or stationed at naval bases or stations in foreign waters should conform to the following conditions:

1. Parcels may not exceed 20 pounds in weight and must be so prepared for mailing that the contents can be readily examined. Substantial boxes or other suitable containers should be used.

2. The parcels must bear the name and address of the sender in the upper left hand corner of the address side and be addressed in the following manner:

(a) Name of addressee in full together with his rank or rating.

(b) The designation of vessel or station or naval base to which addressee is attached.

(c) "Care of Supply Officer, Fleet Supply Base, 29th St. and 3d Ave., Bush Terminal Station, Brooklyn, New York."

(d) The words "Christmas Box" or "Christmas Present."

3. Parcels prepared and addressed in accordance with the foregoing will be chargeable with postage at the fourth class or parcel post zone rate applicable between post office where mailed and Brooklyn, New York.

4. No perishable food products other than those packed in tin containers should be inclosed in Christmas parcels.

5. Parcels may bear inscriptions such as "Please do not open until Christmas," "Merry Christmas," "Happy New Year," "With Best Wishes," and the like; also the names and quantities of articles inclosed together with such other marks or words as may be necessary "for purpose of description" of the articles.

6. Christmas parcels for naval officers and men should be mailed as soon as possible so as to reach Bush Terminal Station not later than November 15, 1918.—A. M. Dockery, Third Assistant Postmaster General.

WAR POINTERS

Eat less—Breathe more.
Talk less—Think more.
Ride less—Walk more.
Clothe less—Bathe more.
Waste less—Give more.
Preach less—Practice more.
Worry less—Work more.

Stop nagging, twitting, insinuating, suspecting those whose love you wish to hold. You assassinate love when you ridicule it.

They Fit and They Last-

Mayer

HONORBILT WORK SHOES

Ask your dealer for Mayer Shoes. Look for the trade-mark on sole.

F. Mayer Boot & Shoe Co.
Milwaukee, Wis.

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

Raynster

Trade Mark Reg. U. S. Pat. Off.

Look for this Label in your Raynster

A Mark of Value

There are many kinds of raincoats at varying prices. You cannot estimate their value by their looks.

But you can recognize the Raynster Label and avoid uncertainty. The Raynster Label identifies honest worth—it is the manufacturer's assurance of full value in materials and workmanship.

The Raynster Label is found in a complete line of weatherproof garments—heavy rubber surfaced work coats, smart cravenetted cloth coats, slip-ons, featherweight silks, and warm, heavy ulsters.

Many of these coats look like good overcoats and are generally worn as overcoats as well as raincoats.

Outfit your family with Raynsters. There are Raynster models for women, men, girls and boys. You'll find a Raynster at just the price you want to pay.

United States Rubber Company
Clothing Division, New York and Boston

Raynster
Reg. U. S. Pat. Off.

Los Angeles Market

Los Angeles, Nov. 6, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.

Cal. Extra Creamery 50

CHEESE

Brokers' prices:

California fresh, lb. 30

EGGS

Exchange quotations. Price to retailers 2 to 3 cents higher.

Fresh extras 78
Case Count 70
Pullets 68

POULTRY

We quote to producers.

Broilers .....37@41
Fryers 33
Hens, small, 27@28; heavy 31
Colored 32
Ducks, lb., 22; ducklings .....23@24
Roasters 30
Roosters, old 20
Turkeys .....31@34
Geese 20
Belgian Hares 18
Squabs .....30@35

LIVESTOCK

Report of live stock conditions on the Los Angeles market as compiled by the United States Department of Agriculture, Bureau of Markets, through the local office:

Bulk of steers reaching this market are bringing $11.50. A few loads of very good quality stuff brought $12 f. o. b. Los Angeles. These $12 steers will find an outlet through export orders recently placed on this market.

Some excellent Utah cows were sold this week.

The supply of calves is moderate and have advanced about 50c per cwt.

The supply of hogs has been liberal. The recent heavy runs on the Eastern markets being reflected on the local market which was overloaded last week. The market this week is about 50c better than last week's closing.

There are a lot of ewes reaching this point, but the market for them is very draggy as most of them are old shelly ewes. The quality of lambs is improving. Arizona lambs being especially good. Few wethers reach this market.

Hog prices quoted below are based on 200 pound average hogs. Driven-in, or truck hogs sell for ½c less.

Hogs .....16.50@17.00
Cattle—
Good Steers .....11.50@12.00
Common to medium steers.....9.00@11.00
Good cows .....7.50@8.25
Common to medium cows .....5.50@7.00
Canners .....5.00@5.50
Sheep
Lambs, 65 to 75 pounds.....15.50@16.00
Wethers .....11.00@11.50
Ewes .....8.50@9.50

Corrected Wednesday morning November 6, by the Cudahy Company.

Cattle—
Beef steers, av. 1000-1100 lbs.....12.00
Heifers, good 8.50
Cows, good .....8.00@8.50
Veal Calves 9.00
Canners .....5.50@6.00

Hogs—
Av. 150 lbs. 16.50
Av. 175-225 lbs. 17.50
Rough, docked 20 lbs.; piggy sows, 40 lbs., stags, 40 per cent.
Prime wethers .....10.00@11.00
Ewes .....9.50@10.00
Lambs .....14.50@15.00
Yearlings .....11.00@11.50

POTATOES

Wholesale selling prices:

Burbanks .....1.90@2.40
Sweet, lug .....65@75
Idaho Russett .....2.00@2.25

ONIONS

Wholesale selling price, cwt.

Australian Brown, lug .....1.25@1.50
White Globe, cwt. .....2.25@3.00

VEGETABLES

Wholesale prices:

Beans—String .....5½@7
Limas, lb. .....5@6
Cabbage, cr. .....2.00@2.50
Carrots, doz. .....45@50
Cauliflower, cabbage cr. .....2.00@2.25
Celery, cr. .....4.00@5.00
Corn, lug. .....50@90
Cucumbers, lug 75
Egg Plant, lb. .....3½@4
Horseradish, lb. 15
Lettuce, cr. .....65@75
Peppers, chili, lug 45@50; Bell, lug 55@65
Pumpkins, lb. .....1¼@2½
Rhubarb, bx. .....65@70
Squash—Hubbard, lb. .....1½@2½
Summer, lug 75
Tomatoes, lug .....1.00@1.75
Turnips, doz. 40

FRUITS

Wholesale prices:

Apples—Bellefleurs, bx. .....1.35@1.75
Yucaipa Delicious .....2.00@2.75
Jonathans .....2.60@2.85
Cranberries, 1-3 bbl. .....3.75@4.00
Figs, lb. .....3@5
Grapes — Homegrowns, Muscats, 5½@6; Tokays, 5½@7; Cornichons, 5@6; Malagas, 5½@7; Emperors, 6@7.
Melons—Casabas, lb., 2; Watermelons, lb., 1@1½.
Pears—Bartletts, lb., 5@8; Comice, lb., 7; Winter Nellis, lb., 6.
Peaches—Salways, lug, 1.75@2.00; Orange Cling, 1.75.
Persimmons, lb. .....5@8
Quinces, lug. .....80@1.10

CITRUS

Oranges—Valencias .....11.50@13.00
Grapefruit, Seedless, bx. 4.75
Lemons, pk., 9.00@9.25; loose...4.00@5.00

HONEY

Jobbers' prices:

White extracted .....20@22
Light amber extracted .....18@20
Amber extracted 16
Fancy white comb, per case.....6.50
Comb Lt., amber, per case .....5.00@6.00
Beeswax, lb. .....32@34

BEANS

Price to retailers (F. E. Harris Co.), cwt.:

Lady Washington 11.00
Navy 11.00
Pinks 8.25
Tepary 7.00
Red Mex. 8.75
Lima 12.50
Blackeyes 7.00
Garbanzos 10.75
Soy 7.75
Lentils 22.00
Kidney 11.75
Henderson Bush Lima 10.50

HAY

Quotations by Nichols - Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

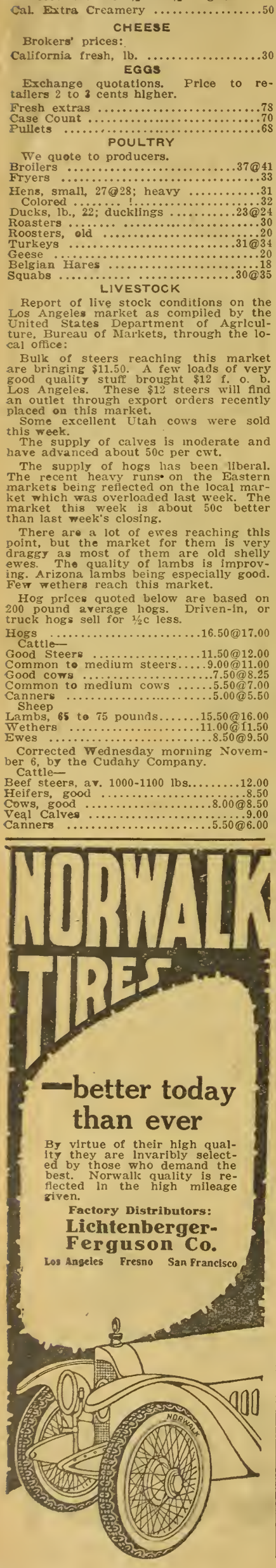
No. 1 Tame Oat .....26.00@28.00
No. 2 Tame Oat .....23.00@25.00
No. 1 Barley .....22.00@24.00
No. 2 Barley .....19.00@21.00
No. 1 Alfalfa .....20.000@22.00
No. 2 Alfalfa .....17.00@19.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS

See San Francisco market.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TIRES
—better today than ever
By virtue of their high quality they are invariably selected by those who demand the best. Norwalk quality is reflected in the high mileage given.
Factory Distributors:
Lichtenberger-Ferguson Co.
Los Angeles Fresno San Francisco
NORWALK

San Francisco Markets

San Francisco, Nov. 6, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapped, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:

Extras 59

CHEESE

Dairy Exchange quotations:

Cal. Flats .....32@34
Ore. Triplets 36
Jack Cheese, full cream .....Nominal

EGGS

Dairy Exchange quotations:

Extras 88½
Selects Pullets 80½

POULTRY

We quote to producers, lb.:

Per lb.: Large hens, 39@41; small hens, 35@38; broilers and fryers, ¾ to 1½ lbs., 45@50; 1½ to 2 lbs., 40@41; 2 lbs and over, 37@40; old roosters, 23@24; young roosters, 35@38.

Belgian hares, live, 19@21.
Jack Rabbits, doz., 2.50@3.00.
Squabs, doz., 3.50@5.00.
Turkeys, dr., 37@40; live, 28@30.

LIVESTOCK

Prices gross weight:

Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.

Steers, lb., 10½@12½; thin, 8@9; cows and heifers, 7@8¼; thin, 5@6; calves, 8@11.

Sheep — Lb. gross weight: Wethers, 11½@12; ewes, 9¼; lambs, yearlings, 12@12½; milk, 14@14½.

Hogs—Hard grain fed, weighing 100 to 140 lbs., 16; 140 to 250 lbs., 16½; 250 to 325 lbs., 15½.

POTATOES

Wholesale selling prices at wharf, cwt.:

Gems 2.25
River, new cwt. .....1.45@1.90
Sweets, lb. .....3@3½

ONIONS

Wholesale selling price on wharf, cwt.:

Australian, Brown and Yellow....90@1.00
Garlic, new, lb. .....12½@15

VEGETABLES

Wholesale selling price:

Artichokes, doz. .....40@75
Beans, String, lb. .....9@10
Carrots, sk. .....1.00@1.25
Celery, doz. .....50@60
Cucumbers, lug .....75@1.25
Pickling, lb. .....2½@5
Onions, green, bx. .....65@75
Egg Plant, lug .....1.00@1.25
Peas, lb. .....12@15
Peppers, Bell, lug .....50@75
Rhubarb, bx. .....1.00@1.25
Squash—Summer, lug .....2.00@2.25
Squash—Summer, lug .....50@85
Marrowfat, sk. 1.00
Cream, 75@1.00; Hubbard, sk..1.40@1.50
Tomatoes, lug .....1.25@2.00
Pumpkins, sk. .....1.00@1.25

FRESH FRUITS

Apples—Jonathan .....1.50@2.00
Bellefleur .....1.35@1.65
Newton Pippins .....1.25@1.65
Bananas, lb. .....7½@8
Berries—Ch.: Strawberries, 12.00@15.00; raspberries, 10.00@13.00; blackberries, 10.00@12.00; huckleberries, lb., 12½@14.
Figs, double layer.. .....1.00@1.25
Grapes—Lug, 1.50@2.00; fy. Verdel and Malaga, 2.50; fy. Muscat, 3.00; cr., fy. 1.50@1.75; ch., 75@1.50.
Melons—Casabas, 1.50@2.00; Honeydew, 1.50@2.00.
Olives, lb.: Queen, 13@14; small, 8@10.
Pears, Bartlett, wrapped bx....2.25@2.50
Beurre Hardy, lug 1.50
Kieffer, bx. .....2.25@2.50
Persimmons, bx. .....1.00@1.25
Pomegranates, ½ orange bx.....1.25@1.50
Pineapples, doz. .....4.50@5.00
Quinces, lug .....1.00@1.25

CITRUS

Lemons, bx. fy., 6.50@9.00; lemonettes, 4.50@6.00; oranges, 11.00; grapefruit, 3.50@5.00; limes, half bx., 2.50@3.00.

NUTS

The Almond Growers' Association has established opening prices as follows per pound:

Nonp. 27½
I.X.L. 25½
Ne Plus 24½
Drake 20

Outside dealers have named prices above these quotations and it is understood association stock is practically closed out and prices withdrawn.

Walnuts: Net prices have been named by the California Walnut Growers Association:

No. 1 Softshell 28
No. 2 Softshell 25
Jumbo 30
Fancy Budded 31½
Golden Gate Budded 29

Franquettes, Eurekas and other fancy varieties sold on sample. No. 1 Softshell guaranteed 88 per cent good; Fancy Budded, 90 per cent. In case of worms or damage by ants not more than five per cent.

RICE

Prices which rice millers of this state have voluntarily agreed with the food administration for California to pay to growers for paddy rice are as follows:

No. 1 and No. 2 Japan, in sacks, $4.32 per 100 pounds.

No. 3 and No. 4 Japan, in sacks, $4.16 per 100 pounds.

Prices for other grades will be paid for on a basic value proportionate, and no higher prices than those quoted above for any grades whatever will be paid.

The millers agree further to sell cleaned rice and by-products for prices not to exceed the following:

Fancy Japan, 1½c per pound.
Choice Japan, 7⅜c per pound.
Fancy second heads, 6⅞c per pound.
Screenings, 5⅝c per pound.
Brewers', 5¼c per pound.
Rice polish, $50 per ton, carlots.
Rice bran, $36 per ton, carlots.

BEANS

Jobbers' prices, cwt., recleaned:

Limas .....11.75@12.00
Bayous .....7.50@7.75
Small Whites 10.00
Large Whites 9.00
Blackeyes 6.40
Pinks 6.90

HONEY

Jobbers' prices:

White extracted .....20@22
Light amber extracted .....17@20
Amber extracted 16
White comb, cs. .....4.50@6.00
Light amber comb, cs. .....3.50@4.00
Beeswax .....32@34

HAY

Under date of November 2, Scott, Magner & Miller says:

Receipts past week 644 tons. This is very low for the present period. No one is buying any feed beyond what he absolutely must have to get along on. The recent north winds and warm weather have done irreparable damage to the green feed, and unless heavy rains are forthcoming almost immediately it is generally conceded that stock will have to be fed throughout the winter months the same as they were last winter, as new grass cannot be expected before spring and then it is a question as to how much there will be after the volunteer was so generally started as it was by the September rains. The government will probably be heavy buyer throughout the entire season, as whether the war is over or not we do not believe the stock will be disposed of for some time to come.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.

Fancy Wheat Hay
(light five wire bales) .....28.00@30.00
No. 1 Wheat or Wheat and Oat Hay .....26.00@28.00
No. 2 Wheat or Wheat and Oat Hay .....20.00@24.00
Choice Tame Oat Hay .....25.00@27.50
Other Tame Oat Hay .....20.00@23.00
Wild Oat Hay .....20.00@22.00
Barley Hay .....20.00@22.00
Alfalfa .....18.00@22.00
Stock Hay (in order) .....18.00@21.00
No. 1 Barley straw, bale.....50@80
Damaged Hay (all kinds), according to condition.
Other Tame Oat Hay .....22.00@24.00
Wild Oat Hay .....22.00@24.00
Barley Hay .....22.00@24.00
Alfalfa .....22.00@25.00
Stock Hay .....18.00@21.00
No. 1 Barley Straw, bale.....50@80
Damaged Hay (all kinds).....Nominal

SEEDS

Flax, lb. .....8@8½
Hemp .....Nominal
Millet .....5@5½
Rape .....2½@3

Citrus Fruit Market

Los Angeles, Nov. 6, 1918.

The citrus shipping year ended Thursday night, October 31. It has been noted by the figures below that it is vastly lower than last year. Also contrary to last year's condition Valencias are practically all cleaned up. On that date last year there were nearly 1500 cars of old crop Valencias yet to move. This year Valencias are cleaned up and only the new crop navels are in line to supply market needs. Floridas are however, going to market in larger quantity than usual at this time.

On the other hand lemons are in warehouses and on trees in greater quantity than any preceeding year and this is most unfortunate for influenza demands are heavy on even the large stock on hand. The totals for the year November 1, 1917 to October 31, 1918 are given below:

Shipments

Southern California; oranges 14,346 cars, lemons 6197, total 20,543. To same date last season; oranges 40,702, lemons 7748, lemons, total 48,450. Central California this season; oranges 2536, lemons 115, total 2651. Last season to same date; oranges 5044, lemons 165, total 5209. Northern California; oranges 203, last year same date 845.

Total of all citrus for the state for this year, 23,397, last year 54,504.

Shipment for year ending October 31, 1916: Southern California, oranges 31,757, lemons 6940, total 38,697; Central California, oranges 5416, lemons 69, total 5585; Northern California, oranges 610, lemons 1; total for the year of 44,893.

Shipment for the year ending October 31, 1915: Southern California, all citrus fruits, 40,160; Central California, 5893; northern 632; total 46,685.

Shipment for the year ending October 31, 1914: Southern California all citrus fruits, 41,978; Central California, 5951; Northern, 409; total, 48,338.

* * *

The year opens with a remarkably satisfactory general condition. The Valencias are practically all shipped and Central California is making shipments much lighter than last year. Her shipments will materially increase within a few years.

The lemon market is somewhat affected by ruling on the part of the food administration which maintains that owing to vastly increased demand and the necessities of the influenza situation price control or at least distribution is essential. This may materially lower present long prices.

Shipments

Shipments of citrus fruits to date since November 1, 1918: Southern California, oranges 12 cars, lemons 108, total 120. To same date last season; oranges 276, lemons 41, total 317. Central California this season; oranges 3, lemons 8, total 11. Last season to same date, none.

MARKET NOTES

The present outlook for rice in this state is that the crop will aggregate 3,500,000 sacks of 100 pounds each, valued at approximately $20,000,000. The California mills have agreed on selling terms, which will be cash on presentation documents, less ½ per cent discount, or net cash arrival inspection goods.

A Los Angeles bean broker reports: "The bean situation is not improved so far as the prices are concerned. In fact dealers and brokers say that the market is weaker than ever and that there is practically no demand for California stocks at present. On the other hand growers who are anxious to get their money out of the crop are insistent on selling and the result is that the market continues to sag. Just now such California stock as is going East has to compete with the splendid Michigan crop and also with beans from Colorado from both of which points lower freight rates prevail than from California, thereby giving them an advantage."

Los Angeles milk dealers contemplate advancing milk prices to 9 cents per pint and 16 cents for quarts. They are now paying producers on butter fat basis $1.07 per pound.

Early frosts have caught some tomato districts and prices are advancing sharply.

Poultry on the Dairy Farm

By J. E. Dougherty

THE best place to raise more poultry and eggs at least cost is on the farm where the feed, to a large extent, is grown. Poultry will pick up from the fields and around the barns a large amount of feed that would otherwise be wasted and will turn this feed into eggs and poultry meat.

How many fowls a farmer should keep will be governed by the size of his farm and the percentage of the total ration that the farm can supply, as well as his personal attitude toward chickens. A laying fowl will consume approximately 75 pounds of grain and mash per year, nearly all of which can be grown on the farm, as is clearly shown in the following simple, yet well-balanced laying ration designed to meet the present war conditions:

Grain Mixture — Fifteen pounds whole barley, 15 pounds whole milo.

Dry Mash Mixture—Five pounds ground barley, five pounds wheat bran, five pounds wheat shorts, two pounds soy bean or linseed meal, three pounds meatscrap or fishscrap, one-half pound granulated charcoal, one-tenth pound sifted dairy salt.

Feterita, Egyptian corn, Indian corn, etc. may be substituted for all or a part of the milo in the grain formula and plump oats for the barley. Where sour skim milk or buttermilk can be kept before the fowls in drinking vessels so that they consume from 35 to 40 pounds of milk per 100 fowls per day, investigations conducted at the California experiment station indicate that no meatscrap, fishscrap, soy bean meal, linseed meal, etc., need be fed in the mash, as the milk will take the place of other high protein feeds. Milk is one of the very best animal feeds that can be fed to poultry and both the small and large dairyman may well consider the use of poultry as a most profitable means of utilizing such dairy by-products as skim milk, buttermilk, whey, etc.

A Practical Demonstration

County Agent C. R. Adamson of Cochise County has arranged to cooperate with a resident of Douglas in securing a start of pure bred White Leghorn hens. It is proposed to keep a back-yard flock of 200 hens and cater to a select trade. With years of practical experience in the poultry business this is a safe and valuable demonstration for County Agent Adamson to conduct. The poultry man has every assurance of success if he follows the instruction given him. This is not only a benefit to the poultry man but to his neighbors who will have their attention called to the results through the farm bureau plan of work. Each consumer who can be economically changed to a producer is directly assisting in the solution of the high cost of living problem associated with the war. Our Liberty Bond money purchases food which must first be produced.

Mongrel flocks in the opinion of County Agent Adamson seldom produce eggs at a profit to the producer. His investigations in comparing pure bred Leghorns of a good strain with mongrels show by the scales that the pure bred ones actually produce larger eggs.

Short Courses in the Art of Beekeeping

A series of short courses in apiculture will be given this year by the division of agricultural extension, University of California, in cooperation with the extension service, United State department of agriculture, as follows:

San Diego, November 25 to November 30, 1918.

Davis, December 2 to December 7, 1918.

Visalia, December 9 to December 14, 1918.

Riverside, December 16 to December 21, 1918.

"The purpose of these short courses is to afford experienced beekeepers an opportunity to become acquainted with the most successful methods in practice among their fellow craftsmen, and to learn under the instruction of scientifically trained men, the fundamentals of bee behavior, a knowledge of which is essential to the successful practice of beekeeping. Also to offer to those of limited experience and to students contemplating beekeeping as a business, a period of intensive training, to the end that we may all become better beekeepers."

These courses will be under the general supervision of George A. Coleman of the University of California, assisted by such experts as Dr. E. F. Phillips and George S. Demuth of the United States department of agriculture bureau of entomology, and M. H. Mendleson, E. R. Root and F. C. Pellette, practical beekeepers and authorities.

Transfer Bees to Modern Hive

Hundreds of thousands of bee colonies, representing about one-third of the number kept in the United States, are housed in box hives and produce for their owners an insignificant amount of honey compared with what they might do if they were transferred to movable-frame hives and handled by improved methods. Much of the honey produced by colonies in box hives is wasted by crude methods of securing the crop, and these colonies are reduced in earning value by uncontrolled swarming and by the annual loss of bees which die in winter because of lack of protection and sufficient food stores.

While bees may be transferred at any season when they are active, the bulletin states that the best time is during the season of fruit bloom when the combs contain little honey and when the bees will gather nectar rather than rob honey from a hive which is being transferred. Another good time for transferring is immediately after the first swarm of the year when the number of bees in the hive is greatly reduced and when there is no danger of losing or injuring the queen. She goes with the swarm, leaving queen cells in the hive. Transferring when robber bees are active requires that the work be done inside a screened or bee-tight building.

There are five methods of transferring. One consists in cutting the combs from the box hive and placing them in a new movable frame hive and transferring the bees by shaking or drumming them from the old hive. Another way is to drum the bees out and move them to new hives which have been previously provided with full sheets of comb foundation. The third method consists in catching the swarm as it issues from the old hive and immediately putting it in the new hive placed on the old stand. In the fourth method the new hive containing comb foundation is placed on the old one, and an opening for the bees provided between the two. The fifth method requires a little special equipment, and takes advantage of the fact that in some localities the bees are almost sure to swarm. Place the new hive near the old one and provide it with a queen trap near the entrance in such a way that when the bees swarm the queen will be caught, and the worker bees automatically will enter the new hive. These methods are described in detail in Farmers' Bulletin 961, which will be sent free, so long as the supply lasts, on application to the United States Department of Agriculture, Washington, D. C.

CANADA'S NEW WEIGHT STANDARD

Canada has established the following weights, by the bushel, by which vegetables must be sold:

Artichokes, 56 pounds; beans, 60; beets, 50; bluegrass seed, 14; carrots, 50; castor beans, 40; clover seed, 60; hemp seed, 44; onions, 50; parsnips, 47; potatoes, 60; timothy seed, 48; turnips, 50.

Any bag of vegetables sold by the bag shall contain: Artichokes, 84 pounds; beets, 75; carrots, 75; onions, 75; parsnips, 65; potatoes, 90; turnips, 75.

Chickens Sick or Not Doing Well?

An Extraordinary Offer: Germozone is a standard remedy everywhere for chicken troubles, roup, colds, cholera, swelled head, bowel complaint chicken pox, canker, not doing well, not laying, etc Now our proposition If no dealer there handling Germozone and you will agree to use it and pay if satisfied, we will send you a 75c package without a cent in advance No pay if not satisfied Can we do more? And we will send free 5 poultry booklets Write today

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EDITOR WOODALL SPEAKS RIGHT OUT ABOUT EGGS

In the last issue of POULTRY NEWS he says, "If hens WON'T lay, MAKE 'em lay" and tells of a very successful method of wonderfully increasing egg production. If our readers will write QUICKLY they can obtain a FREE copy of this splendid paper containing this valuable article. Address, POULTRY NEWS, 626 Globe Building, Minneapolis, Minn.

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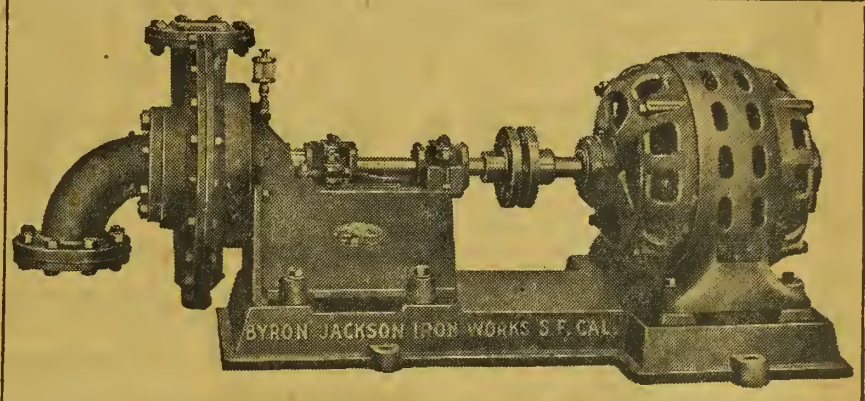

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

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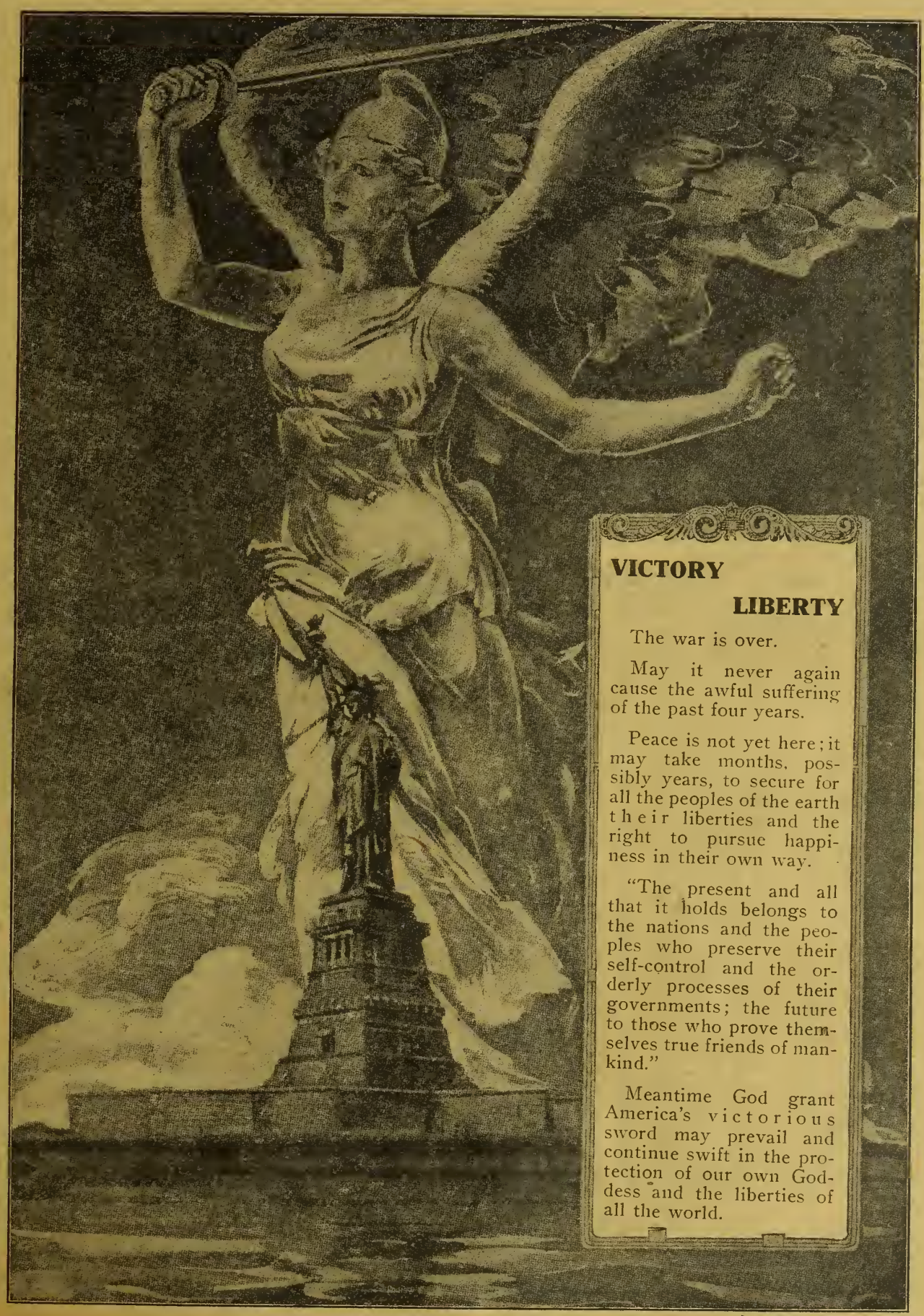

VICTORY

LIBERTY

The war is over.

May it never again cause the awful suffering of the past four years.

Peace is not yet here; it may take months, possibly years, to secure for all the peoples of the earth their liberties and the right to pursue happiness in their own way.

"The present and all that it holds belongs to the nations and the peoples who preserve their self-control and the orderly processes of their governments; the future to those who prove themselves true friends of mankind."

Meantime God grant America's victorious sword may prevail and continue swift in the protection of our own Goddess and the liberties of all the world.

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

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Combined with California Cultivator 1914.
Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916.

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Saturday, Nov. 16, 1918

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We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

The spirit of Liberty Enlightening the World has risen as Liberty Militant to sweep from the world the evil thing in Central Europe that plotted to enslave it. Now, with that thing beaten to its knees, she stands as Liberty Victorious, still poised with watchful eye and sword in hand to render justice and to aid the newly freed peoples of the earth to establish normal free and happy lives.

ANOTHER LIBERTY LOAN

The federal reserve bank is offering to member banks 4½ per cent tax certificates. As this is similar to the action which has preceded every other Liberty Loan, it is presumed that the country must be prepared to meet the demands of another great loan some time during the coming spring.

INCOME TAX

The war may or may not be over, but the income tax will live forever. The amount of the income tax and, in fact, all its details, are yet to be settled in Congress, but one point already is definite, and that is that after January 1 a return or report will have to be made by everyone to the Internal revenue collector. A year ago the Cultivator was urging its readers to so keep their accounts that this return could be made intelligently and with equal fairness to the government and to the one making the return. The costs of war have been enormous but the burden will not be great if all play fair.

LIBERTY FAIR

Liberty Fair hopes now to become true to name, and plans are in the making for turning it into a great victory or peace celebration. For more than a month all plans have been held in abeyance while the influenza has taken possession of all public gathering plans the country over. The influenza seems to be loosening its grip upon the people, and it has been decided to open the fair on Thursday, November 21. Features not contemplated in the first plans will be added, and a great celebration, as well as fair, will result. Several herds of pure bred live stock have already waited more than five weeks for the opening of this fair.

WAR RELIEF FUND

Let no one imagine that if war is ended the needs of war relief work will be any the less. It has been estimated that for at least two years to come American troops will remain in Europe. This will be necessary as an aid to reconstruction and in securing stable government. For soldiers who are waiting for a chance to participate in active field service there is a zest which will not be given by ordinary police duty, and the work of maintaining the morale of our troops will be even greater under the conditions which will now prevail. Support the United War Relief Work, campaign for which is under way this week.

FARMS FOR SOLDIERS

California's land commission, which is responsible for the movement which established the state land colony in Butte County, has started something toward which the forces at Washington are looking with an idea of encouragement of a similar movement under federal management as an aid to returning soldiers. For some months experts of the department of agriculture and the reclamation service have discussed colonization schemes.

After the Civil War every returned soldier was given a free farm under the homesteading act, and while that movement resulted in some abuse in the form of land speculation, in the main it resulted in the development of vast acreage, larger production of food and a home and occupation for the soldier.

EUROPE MUST HAVE MEAT

With the ending of the great world tragedy comes a call for food from stricken Europe that discloses a condition bordering on famine in the countries that once formed the Central Powers.

Herbert Hoover has just issued a statement to the effect that during the coming year Europe will require 20,000,000 tons of food stuffs.

Details of the demand are not furnished, but it goes without saying that included in the total will be a vast amount of meat and meat products, milk and milk products. The live stock industry of this country will be called upon to furnish these supplies. And the producers should lose no time in preparing to meet the demand. Every class of live stock will be drawn on—and to imagine that the demand will end in 1919 is an assumption for which no basis can be found.

With the way ahead marked so clearly every producer should order his operations with confidence and determination.

It is not expected that these food supplies will be delivered on a basis that is not profitable, but the amount of profit will depend very largely upon economy of production. Production can be definitely cheapened by the more general use of pure bred sires.

GREATEST LIVE STOCK NEED

The biggest problem that confronts the live stock producers of this state is the marketing problem. It has been admitted for a number of years that our Coast markets were not developing as fast as our live stock industry—as a matter of fact, it is generally thought that our markets have held back the logical development of the industry in this state.

The whole business of live stock production is predicated on a fair market and with the certain knowledge that our markets are not all that they should be it would appear that now is a very good time to set in motion any and all agencies that promise relief.

Every live stock organization in the state realizes the conditions that exist and all have discussed the question of markets in their various meetings.

Has not the time arrived when some concerted action, backed by these organizations, should be taken?

Why not a combined meeting of all the organizations for the purpose of discussing this question of markets? The cattlemen are organized, so are the hog producers and the sheep men, but it will require the combined force of all to bring about any change in our present system.

There is no limit to what can be accomplished by clear sighted, keen minded men organized for a common purpose.

AGE OF ACCOUNTABILITY

Some folks require a long time to reach the age of accountability. At least it seems so from some transactions recorded in the newspapers—even sometimes in the county recorder's office. Often all that such people need is a jolt, then they become wiser.

Once upon a time A. Layma went to A. Wise One and said, "I have opportunity to buy stock in a copper company. Valuable lands have been secured and capital is needed to develop the property—and pay the salary of the promoter. The promoter assures me I will secure 100 per cent per annum on my stock 'just as soon as the property can be developed.' Now my money is drawing only 4¼ on Liberty Bonds and 7 per cent on mortgages, which is not sufficient for a living, while 100 per cent from 'high producing' copper property will be attractive. Now, shall I sell my Liberty Bonds and invest in 'copper'?"

A. Wise One looked even wiser than usual and said, "Before advising you to change your gold for copper permit me to ask—How old are you?"

Now, unfortunately Mr. Layman's hair was streaked with gray, excepting a saucer shaped spot which was not, so he did not wish to confess the burden of his years to the wise one, who would say no more. So with his right hand he slowly rubbed the saucer shaped spot and sat a long long time—

Thinking.

RECONSTRUCTION

Great as were the problems of war, the world is now confronted by greater in the reconstruction and building for peace. The first question of all is production, conservation and distribution of food. The world is hungry, and the first request sent out by humbled Germany was: "Send us food; we are starving." America's production in part, but to a greater extent, her conservation, directly resulted in saving our Allies and victory. With little question before our vessels return many of the American boys they will be used to distribute food. This at first must almost entirely come from America, but with the Dardanelles open, and with ships released to go to Australia, there will ultimately be food brought from southern Russia, from India and from Australia. After food, it is probable the most important question will be that of finance. Civilization has never been confronted by such a financial situation. The gross debts of the world exceed $200,000,000,000. Food and material property to the value of almost another $200,000,000,000 has been destroyed. Ten millions of men have gone to a premature death. The interest on the war debt alone will amount to more than the administration costs of all the governments of the world before the war. Other millions of men who for the past two or four years have been engaged in the business of destruction are now to come back and take up the work, with the rest of the world, of reconstruction.

If the forces of food producers and distributors can act swiftly enough to keep hunger away it is probable that anarchy may be stood off and reconstructive methods proceed rapidly, but if sickness and hunger prevail to a great extent the world over our problems will increase. Civilization cannot live under hunger conditions. As quickly as possible cantonments of America should release their men that the help needed by food producers may be secured.

This Week's War Notes

A Shout!

The War is Finished!

The Shout soon became a Roar of human voices, bells, whistles, guns and everything which would make noise.

Officially hostilities ceased at the eleventh hour of the eleventh day of the eleventh month, Paris time.

Difference in time gave the Pacific Coast advantage of many hours, and soon after One A. M., November 11, the din of joyous celebration began and continued for 24 hours.

The failure of the last German loan, the hunger of the German people, the rumble of approaching rebellion, convinced even the militarists of Germany that the end had come. Delegates were sent to Marshal Foch; the terms of the armistice, amounting virtually to unconditional surrender, were given to them and sent to the military authorities at German great headquarters; Foch gave a time limit of 72 hours; instructions to the delegates were received in that time; terms of the armistice were agreed to by the delegates; and the first step toward world peace was taken November 11, 1918. The Allies gave the parting salute with the firing of practically every gun on the line from the North Sea to Switzerland as the hour of 11 approached.

Germany is hungry and has made appeal through Foreign Secretary Solf to President Wilson to intervene and mitigate the conditions of the armistice so as to admit food to the German people who are starving. Emperor William signed a letter of abdication Saturday morning at German great headquarters. A few minutes later Crown Prince Frederick William likewise signed. The kings of Bavaria, Saxony and other lesser kingdoms have likewise abdicated. The former kaiser has escaped to Holland and is interned. He has been indicted in England for murder of innocents, and it is possible England may take steps to secure his extradition.

The total strength of the American army when hostilities ceased was 3,764,677 men. There were already in France, Italy and Russia, 2,200,000.

The spontaneous celebration started by the signing of terms of armistice and which was observed the world over has given suggestion that November 11 be made a holiday the world over.

Under date of November 12 a dispatch from Paris says: "The death of the crown prince is confirmed by The Hague correspondent of the German news agency at Munich, according to advices to the Matin."

Charles, Emperor of Austria, has abdicated, according to Copenhagen dispatch of Tuesday, and a general strike has been declared in Vienna. Internal conditions in Austria-Hungary are most unsettled. She has returned more than a million Italian prisoners to their own country.

Latest reports from Germany indicate great shortage of food. In fact, the people are almost on the verge of starvation. Final draft of armistice terms as amended by Marshal Foch are even more exacting than those first published. Foreign Secretary Solf has also made appeal for as swift arrangement for final peace terms as can possibly be made.

Schwab, director general of the Emergency Fleet Corporation, announces that the ship building program will be continued as an aid in tiding over the labor situation in the earlier reconstruction days. Pending developments in the situation the President directs that all general and voluntary special calls now outstanding for the induction and mobilization of all registrants be cancelled.

The foundation of a new German republic has been proclaimed by Phillip Scheideman from the steps of the Reichstag building. Frederick Ebert has been appointed temporary chancellor. The entire German northern fleet and the island of Helgoland are in the hands of Socialists, and Berlin and many of the principal centers of Germany are entirely in sympathy with the republican movement.

Why Not The Satsuma Orange in California?

By Robert W. Hodgson

THE Satsuma or Unshui orange has recently been brought into the foreground through the announcement that several distinct strains have been isolated within the variety, some being comparatively worthless, while several are high yielding and excellent in quality. This orange was introduced into California from Japan, where it is one of the principal varieties grown, about 1876, probably by Thos. A. Garey. Among the oldest trees of this variety in the state is one planted by Mr. Garey on the old Garey place above Duarte, now owned by W. A. Spinks of avocado fame.

The Satsuma orange grows astonishly well in California and bears large quantities of fruit of excellent quality, which comes on early in the fall and always commands good prices. At present it cannot be said to be grown commercially in this state, being represented largely by occasional specimens in gardens and nursery collections. Why, in the face of all these desirable features, has this variety not been more extensively planted? The writer has never been able to answer this question to his own satisfaction. Apparently it has been due somewhat to a lack of knowledge on the part of growers as to the many desirable qualities of this orange as well as to the fact that successful orange growing in California started in a part of the state where better known and more desirable varieties proved entirely satisfactory.

With the great extension in planting, which followed the demonstration that orange growing in California was successful, however, there came the establishment of orchards closer and closer to the frost line until many hundreds of acres were planted in sections where satisfactory crops could be expected only four years out of five on account of climatic conditions, including both summer heat and winter frost. To remedy the frost factor orchard heating was instituted and efforts to alleviate summer heat are still under way, the most promising at present being the summer cover crop. Nevertheless, the fact remains that there is a considerable acreage in oranges at th present time, particularly in the navel variety, which produces little or no profit because of high costs of orchard heating and small crops set on account of high summer temperatures. This acreage would undoubtedly be much more profitable if planted to a more hardy variety provided it were suitable in other respects. Such a variety has been found in the Satsuma or Unshui orange, which is much better adapted to the extremes in climatic conditions prevailing in these sections.

In addition, there is a vast acreage in California below the foothill thermal belts and extending out on the valley floors where it is recognized that climatic conditions are too severe for either the Valencia or navel orange. A great part of this acreage is admirably adapted to the production of the Satsuma orange; indeed, much more so than portions of Texas, Louisiana and Alabama where this orange is now grown to a large extent.

The writer has been familiar with a planting of 86 trees of Satsuma oranges owned by William MacNamee of Thermalito, in Butte County, for a number of years. There has never been a crop failure and Mr. McNamee considers the trees extremely profitable, having netted better than ten dollars per tree for several seasons past. An interesting fact is that in the fall of 1912, the season of the big freeze, he received an excellent crop and the trees went through the freeze without suffering any injury whatever, although the thermometer reached 16 degrees and practically everything else in the shape of citrus was badly damaged. Mr. MacNamee's trees are on the deciduous stock, Citrus trifoliata, and have made an excellent growth as shown in the picture. They are remarkably thrifty and heavy yielders, the fruit being harvested in October and November when it is perfectly sweet although the rind is still only pale yellow.

The Satsuma orange is seedless and thornless and ordinarily considered a dwarf tree. The fruit is small and flat, and possesses, in common with other members of the Mandarin group, the very desirable feature of the "kid glove" oranges that the skin is loose and easily separated from the flesh and the segments easily pulled apart without crushing. The flesh is deep orange color with a very sweet pleasing aromatic flavor.

The Satsuma in the Gulf Coast States

As mentioned above, the Satsuma orange is now grown to a large extent in the Gulf Coast states, there being approximately 12,000 acres planted in Mobile and Baldwin Counties, the two most important orange growing counties of Alabama. The industry is of very recent development, the first grove having been set out in 1898. Commercial planting did not begin until 1910. As is always the case with a new industry, many mistakes were made, and it is now estimated that at least 30 per cent of the plantings will never reach the profitable stage on account of poor care and unsuitable location. Although the Satsuma orange on the trifoliate root will endure more cold than any other variety of edible citrus fruit, excepting perhaps some of the Webber-Swingle hybrids, great care is necessary in the selection of planting sites in the gulf coast states. The thermometer occasionally gets down to 15 degrees and unless good air drainage is present the trees are apt to be severely damaged, especially if the low temperature prevails for any length of time. One of the commonest mistakes made was in locating orchards too near small bodies of water where cold air is readily formed and where the natural topography does not favor its dissipation.

The young industry has suffered several severe setbacks which have discouraged many growers. On July 5, 1916, a very severe storm was experienced which practically defoliated the trees and also reduced the crop to a minimum. The trees immediately responded by new growth and as a consequence were in no condition to stand the very severe freeze which occurred in February, 1917. As a consequence many trees were killed outright and many others severely damaged. In September, 1917, another severe windstorm was experienced and again the crop was reduced from 50 to 75 per cent. These setbacks, however, will undoubtedly prove blessings in disguise in preventing and correcting errors made in the earlier plantings.

Nevertheless, although the Satsuma industry is considered a success in Louisiana, Alabama, Mississippi and Texas, the fact remains that the gulf coast states are subject to several drawbacks to the growing of Satsuma oranges which are not present in California. Winter temperatures are on the average more severe. Violent windstorms of the hurricane type are apt to be experienced during the summer months, causing the loss of the greater part of the crop. In no part of the California citrus section does this condition prevail. Again, although the Satsuma orange matures early and shipping begins late in October, it is a rare occurrence for the season to be finished without losses being sustained from early frosts. This condition does not exist in large areas in California where this orange could be profitably grown. And last, but not least, we have been growing oranges for years and should have the benefit of all the experience accumulated in the past in the way of cultural operations. Moreover, in the Exchange we have already organized the most competent fruit selling agency in the world.

The Satsuma is no longer a novelty on the market. During the last five years it has been introduced into the principal marketing centers of the East and West, and wherever introduced has met with favor and has stood well the test of competition with other varieties. It would almost seem that California orange growers, especially in the interior valleys, are "overlooking a bet" in not trying out the Satsuma orange more extensively.

LIBERTY FAIR BECOMES VICTORY FAIR

A sober agricultural fair planned as a war aid but which was deferred because of flu quarantine is now to become a victory, peace aid event.

The great Victory Celebration at Liberty Fair, Exposition Park, Los Angeles begins Thursday morning November 21 with a great military opening event, Army, Navy, Air Service all will unite.

Nine days harness and saddle events.

Thangsgiving football and Thanksgiving features.

Two days horse show, and great society events.

Pageants, fire works and other night events every evening.

Great educational exhibit of agriculture, war and other departments of federal government all the time.

In live stock, Friday morning, November 22, will be devoted to weighing in stock. Saturday, 1:30 p. m., live stock parade.

Monday morning, November 25, judging of Shorthorns will begin and continue with various classes till completed.

It will be a great fair of tractors, implements, products, fine arts, home economics, education—everything.

Terms of the Armistice

GERMANY makes unconditional surrender or rather a surrender which has so many conditions that she will be helpless to do other than she is directed to do by the Allies.

The President proclaims: "The armistice was signed Monday morning. Everything for which America fought has been accomplished. It will now be our fortunate duty to assist, by example, by sober friendly counsel and by material aid, in the establishment of just democracy throughout the world."

The Terms in Outline:

Military clauses on western front:

(1) Cessation of operations by land and in the air six hours after the signature of the armistice.

(2) Immediate evacuation of invaded countries, Belgium, France, Alsace-Lorraine, Luxemburg, so ordered.

(3) Repatriation of civilian hostages and prisoners of war of the Allies. German prisoners not released.

(4) Surrender in good condition 5000 guns (2500 heavy, 2500 field,) 30,000 machine guns, 3000 minenwerfer, 2000 airplanes (fighters, bombers —firstly, D73's and night bombing machines.)

(5) Evacuation by the German armies of the countries on the left bank of the Rhine. A neutral zone shall be reserved on the right of the Rhine.

People in countries to be evacuated to be unmolested. Five thousand locomotives, 150,000 railway cars and 10,000 motor lorries in good working order, with all necessary spare parts and fittings, shall be delivered to the associated powers.

The German command shall reveal all mines or delay-acting fuses, and shall assist in their destruction, also all destructive measures that may have been taken (such as poisoning or polluting of springs, wells, etc.,) under penalty of reprisals. Requisition shall be exercised by the Allies and the United States armies in all occupied territory. The upkeep of the troops of occupation in the Rhineland (excluding Alsace-Lorraine) shall be charged to the German government. Repatriation without reciprocity, of all Allied and United States prisoners of war. Sick and wounded who cannot be removed from evacuated territory will be cared for by German personnel.

All German troops at present in any territory which before the war belonged to Russia, Rumania or Turkey shall withdraw within the frontiers of Germany as they existed on August 1, 1914.

Evacuation by German troops to begin at once.

Abandonment of the treaties of Bucharest and Brest-Litovsk.

The Allies shall have free access to the territories evacuated by the Germans on their eastern frontier.

Unconditional capitulation of German forces in East Africa, afterwards changed to evacuation.

Reparation for damage done.

Surrender of all submarines, both cruisers and mine layers and surrender to neutral governments of disarmed battle cruisers, battleships, practically all war vessels.

Freedom of the Baltic. Allies empowered to occupy forts and fortifications.

Allied blockade continues. Black Sea ports evacuated. Russian vessels delivered to Allies. Neutral and Allied merchant vessels which have been seized to be released.

Germany to notify neutral governments that restrictions placed on the trading of their vessels with Allies are cancelled. No transfers of German merchant vessels to neutral flags.

Duration of armistice 30 days.

Agricultural News Notes of the Pacific Coast

Northern California

There are 28,906 acres of tomatoes grown in this state.

Chico cotton fields are estimated to average around a bale per acre.

California has shipped nearly 27,000 cars of fresh deciduous fruits.

The total number of influenza cases in San Francisco is now nearly 25,000.

The Shasta County farm bureau has a permanent home demonstrator.

Eldorado County produced this year 11,622 bushels of wheat, 21,586 bushels of oats.

The San Francisco weather bureau reports temperature for October as far above normal.

The first car of oranges out of Oroville, Butte County, went forward November 6.

Much plowing has been done in all sections of the Sacramento Valley, and grain seeding is progressing.

Corning estimates now that its prune crop damage will not exceed ten per cent.

Olive growers of Butte County are insisting on not harvesting fruit until at least 75 per cent of the surface of each fruit has reddish color.

Millers claim they can secure barley flour from Eastern manufacturers and ship to California cheaper than they can grind California barley.

San Francisco wholesale butter prices hold around 60 cents while eggs are 88½ cents as against 58½ cents last year same date.

Time for filing applications on land in the second state land colony south of Chico has been extended to November 20. Write George Kreutzer, Durham, Butte County, for information.

The state horticultural commission has given warning to pear growers that serious infestation of pear thrips may confront the pear growers next spring.

The University of California is conducting its tractor school this week with approximately 200 students attending. There are 14 tractors aiding in the school work.

The farm bureau of Eldorado County is financing a lime project which will aid in the production of lime for its members to use for agricultural purposes.

The Sutter County farm adviser with pupils from the manual training school at Sutter City has erected the first silo in that county of the farm bureau type.

Fruit shippers are concerned over the new track charge regulations which provide that ten dollars a day shall be paid after 48 hours free time for unloaded cars.

Ranch eggs extras have already reached 99 cents wholesale store prices, and it is predicted that before Thanksgiving $1.15 will be the regular retail.

Heavy storms in some of the rice districts caught grain not yet ripened and caused serious damage, in some cases as high as 50 per cent. Some rice late planted refuses to mature because of the cooler weather.

Answering the request of the state council of defense to place guards at each large warehouse containing food products the board of supervisors of Butte County estimates it will cost the county $4000 a month and suggests that the state bear the expense.

Central California

Harvesting of rice has begun in the rice fields of Wasco, Kern County.

Late shipped Emperor grapes have gone to market in poor condition.

Central California orange groves are suffering from shortage of labor in harvesting the early crop.

Kern County farm bureau's last fat hog sale netted producers around $16, one bunch going at $17.

The Madera creamery has been sold to the local dairymen's association.

The state highway from Tipton to Tulare has been completed and is now opened.

Lindsay, Tulare County, reports some of its fruit testing 11.7 solids to one acid.

Terra Bella cannery has shipped several cars of canned tomatoes to Eastern markets.

Hanford's fat hog auction resulted in $14.75 to $14.95 prices on exceptionally fine stock.

California's production of tomatoes during the past year has exceeded $10,000,000 in value.

The last of the table grapes have been shipped from practically all table grape sections.

Tulare County's orange shipping which began late in October shows increase daily. All fruit must test up to 8-1 standard.

Springvale, Tulare County, reports exceptionally heavy olive crop which has sold at the longest prices ever secured in that section.

Dunlap, Fresno County, recently suffered severely from forest fires which were brought under control by rangers and near-by farmers.

Claus, Stanislaus County, reports rice harvest under way, and where sufficient water was had the yield was very heavy.

Dairymen of the San Joaquin Valley are pleased at the recent shading of prices of alfalfa hay, in some cases a $4.00 lowering in quotation being made.

One Terra Bella, Tulare County, castor bean grower produced 15 bushels per acre and maintains that he can make a profitable crop.

Olive growers of Tulare County are testing out a new olive picker which is reported to save more than half the harvesting labor.

The Kings County farm bureau auction sale held recently at Corcoran resulted in only $14.90-$15.40 per hundred prices. This was somewhat lower than former markets.

A rodent expert of the department of agriculture is directing the work of rodent control in Tulare County He is working in conjunction with Commissioner Collins.

Geo. P. Weldon, deputy state horticultural commissioner, is aiding in the standardization work in the Monterey and Santa Cruz County apple orchards.

The annual farm bureau picnic of Santa Cruz County will be held at Capitola Saturday this week. It will be an all day basket lunch proposition.

Apple picking houses at Watsonville, Santa Cruz County, continued packing through the influenza scare, notwithstanding serious inroads were made in the working force.

Southern California

Ventura County has sold some walnuts at the rate of $600 per ton.

National Orange Show dates, February 18-23.

The Chula Vista Citrus Association held its annual meeting in the packing house November 4.

California has shipped about 12,000 tons of honey valued at about $2,500,000.

Riverside orange growers are planning for liberal use of women's land army helpers in the orange harvest.

The Southern California Fair Association at Riverside has approximately $3000 cash left after the expense of its recent fair.

Southern California's bean crop 1918 will bring greater return of money to the state than its orange crop.

Imperial County is discussing matter of highway from that section by way of Warner's Springs in San Diego County.

Bean threshing is practically completed, and no serious damage has been done to Lima bean sections by the light rains.

The first car of walnuts shipped by the Hemet Walnut Growers' Association netted over $7000. Another car is loading which will net $12,300.

Chino and San Fernando Valleys are contemplating larger plantings of sugar beets. Prices were so low last year that these two sections planted practically none.

The big wine grape vineyards east of Ontario, San Bernardino County, are planning to save their vineyards and make the products into grape syrup.

The bean market is still somewhat on the down grade, some predicting that it may reach the ten cent price. Recent sales have been made at 12 cents.

One Bloomington, San Bernardino County, orange grower netted ten cents per pound for Valencia oranges as they came from the tree. This only from one exceptionally favorable shipment.

One bean thresher near Oxnard, Ventura County, has made money for its owner and bean growers by threshing over old straw, the beans from which were threshed under unfavorable circumstances, and good results were secured in rethreshing this straw. One particular setting netted $1.00 per minute.

Ventura County Lima bean growers are endeavoring to perfect a movement looking toward stabilizing bean prices. A contract is issued pledging all signers not to take a price lower than 40 cents less than the quoted f. o. b. Coast price of the California Lima Bean Growers' Association, the contracts to be conditioned on 100,000 bags being signed.

The American Beet Sugar Company with plants at Oxnard and Chino is offering a contract to growers. If sugar is sold by the factory at 4½ cents net, the grower will receive $4.20 a ton for beets of 12 per cent sugar content, or $7.00 a ton for beets containing 20 per cent sugar, which is an ordinarily high grade beet. With sugar selling at 10 cents, the grower will get $10.66 a ton for 12 per cent beets and $19.55 a ton for 22 per cent beets.

The Coast and General

The season's first cargo of Almeria grapes sold in New York on October 28 for prices around $10 per barrel.

The Catskanine fish hatchery has received over 16,000 Chinook salmon eggs.

The California state insectary has shipped ladybirds (Delphastus catalinae) to Florida.

Wenatchee, Washington, has shipped over 3000 cars of apples and is now shipping over 100 cars daily.

Chicago price on potatoes is shading. Good sack stock is running around $1.60 to $1.90.

The National Farm Exposition and State of Ohio Apple Show will be held at Toledo, Ohio, December 6-14.

Wheat stocks on hand this date compared to a year ago same date show nearly three times greater this year.

The Yuma Valley of Arizona produced over 300 acres of peanuts this year.

The Walla Walla County agent has 85 pounds of lady bugs in storage ready for release next spring in aphis infested truck farms.

Owing to labor and storage shortage Seattle is finding difficulty in disposal of immense holdings of winter apples.

The state of Wisconsin is offering $1000 in cash awards for cheese to be exhibited at the Milwaukee Cheese Convention, January 8-10.

The Farmers' National Congress and National Farm Women's Congress will meet in Jacksonville, Florida, December 3-6.

Eastern Washington orchardists are complaining because of ravages of codling moth; the amount of fancy fruit is running very low.

Texas turkey growers are figuring on disposing of their stock around 20 cents though many are holding for higher offers.

The Yakima Valley, Washington, has had all of its dairy cattle tuberculin tested, finding only 14 reactors in 1400 head of stock. One per cent is better than the average.

Schools of Hood River, Oregon, closed to aid in the apple harvest, and in the three weeks they were closed the various pupils earned something over $18,000.

Apple growers of the Yakima Valley are appealing to the government to give aid or at least to investigate the ravages of the apple worm in that section.

A war emergency and reconstruction conference under the auspices of the Chamber of Commerce of the United States will be held in Atlantic City, December 4-5.

Ohio state agricultural college extension service is providing outline and suggestions for a Thanksgiving or harvest festival in the schools of Ohio.

Prof. Newell of the Florida experiment station staff is to come to California and study California fruit growing conditions and especially law enforcement.

Prune growers of Oregon and Washington who depend entirely on artificial heat have taken advantage of California's loss from the storms. The Northwest's output this year is estimated to be around 40,000,000 pounds.

Onion Production In California

By R. G. Risser, Department of Agriculture

THE production and consumption of the onion in California is continuous. There is not a month in the year in which the crop is not growing in one or more of the important districts, nor a month in the year when the product is not being marketed in the cities which are supplied from this state. Harvesting of the commercial plantings of the early, intermediate and late crops alone covers approximately half of the year. From the time the first Bermuda onions are pulled in the Coachella and Imperial Valleys until the last of the late crop of the San Joaquin Delta has been sacked more than six months have elapsed. The period of heaviest shipments covers the months from May to November inclusive.

One-third of a Yard of White Onions

Localization

While the largest areas of onions are concentrated in a few well defined districts, the crop is grown quite widely in the state, 20 counties producing sufficient for straight car shipments. Carlots originate as far south as the Mexican border and as far north as Lassen County. The crop is grown both on the Coast and in the interior valleys. It is grown extensively on the desert soils, on the peaty soils, and on the sediment soils. The most important districts for the Bermuda type are Riverside and Imperial Counties; for the intermediate crop or early reds and yellows, San Joaquin, Yolo and Sacramento Counties; and for the late crop or main planting, San Joaquin, Contra Costa and several other counties of less importance.

Utilization

The onion as grown in California is used for local consumption, distant shipment, storage, evaporation and seed production. The quantity used in the manufacture of pickles and catsup is small, but the amount used by the army cantonments is more important. The volume dehydrated or evaporated depends largely upon government contracts. The supplies of bulbs required by seedmen for planting are a considerable part of the crop, aggregating over a thousand cars when a large area of seed is grown. The quantity used for this purpose depends upon the prospective demand for seed as viewed by contracting seedmen, the seedmen's ability to let contracts with growers at acceptable terms, and the price of onion bulbs prior to planting.

Growing Conditions

In common with other Western districts and in contrast with districts in the Eastern and Central states, the yields of onions in nearly all sections of California in 1918 were extremely light due largely to thrip injury which stunted the growth of the bulbs. Entomologists explain the severe thrip damage in the Western states and the big yield farther East by saying that the winter of 1917-18 was unusually mild in the far West and unusually severe in the East, which had much to do with the prevalence of thrips on the Pacific Coast and in the Rocky Mountain districts, and the exceptionally good growing conditions in the large Eastern districts.

Quality

Aside from small sizes which have been conspicuous in early, intermediate, and late crops this year, the quality of the late crop was seriously impaired by the general development of black mold. The keeping quality of the product has been ruined by the development of this fungus, which is often called smut, but differs widely from true onion smut. Rains during the harvest period are chiefly responsible for the unusually severe infection of this disease.

Acreage

The area harvested in 1917 and 1918 is as follows:

Bermuda Type: Early onions of Southern California, 1250, 1412.

Intermediate Type: Early Reds and Yellows of Central California, 1500, 1300.

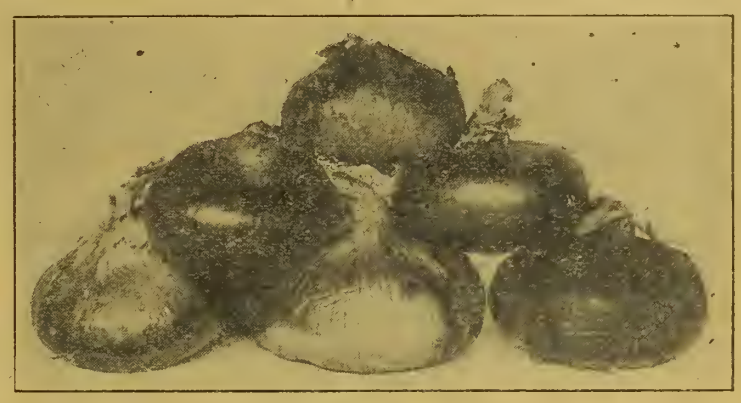
Late Type: Main crop Central California, 8700*, 9400*.

Total of three types, 11,750, 1°,112.

* Includes acreage of bulbs under contract to seedmen.

Varieties

The standard varieties of the Coachella Valley of Riverside County and also the Imperial Valley are yellow Bermudas and Crystal Wax, the standard varieties of the intermediate crops are strains developed locally, known as early reds and yellows, and the most popular late sorts are Australian Browns and White Globes. The so-called "Buckskin" which gets its name on account of its remarkably tough skin has attracted much attention in the past two or three years. It is more closely related to the Australian Brown grown in Australia than is the ordinary Australian Brown as grown for many years in this country and generally known on American markets.



Typical Australian Onions

United War Work Campaign

By W. M. Jardine

THOUSANDS of American farm boys are already in the front line trenches. Other thousands are in the training camps or on the farms awaiting their call. American agriculture has contributed its share of the man power that is to win the fight for the world's liberty. The farm boys in the service bave written home of the friendly workers of the Y. or the K. of C. perhaps, that they find on every hand, and of the huts that remind them of home with their various comforts, writing materials, musical instruments, a place to play games at night, to attend church services, or join classes in French.

Despite the ever pressing farm work, parents have taken time from the farms to visit their sons in the camps. There they have found the Hostess House where they may meet and visit with their boys in homelike surroundings. In the neighboring cities they have found agencies ready to aid them in securing suitable lodgings, and information bureaus that make confusion impossible even to the most inexperienced travelers. Farm folk know that when their boys leave for the training camp and the front, the influences that made life comfortable, safe and happy for them go with them every step of the way.

This work of safeguarding the boy physically, mentally, morally and spiritually, is under the direction of seven great affiliated, cooperating agencies that operate under an executive order of President Wilson. They are the Young Men's Christian Association, Young Women's Christian Association, National Catholic War Council, Jewish Welfare Board, War Camp Community Service, American Library Association and the Salvation Army. The budget of each is scrutinized and passed upon by the war department; and their work is governed by a war council of nationally known men and women.

In France the soldiers are not gathered into great cantonments as they are in America. They are spread over hundreds of muddy, chilly little towns. There is no store in this town, no theater, no library, no place to write a letter or be warm or dry—until the hut comes. With it comes books and writing paper, baseballs, bats and gloves, chocolate and tobacco, motion pictures, lectures and theatrical entertainments. Home comes with the hut, bringing all the love and care and cheer of the folks who have stayed behind. When the troops move, as they are doing constantly, the hut moves with them.

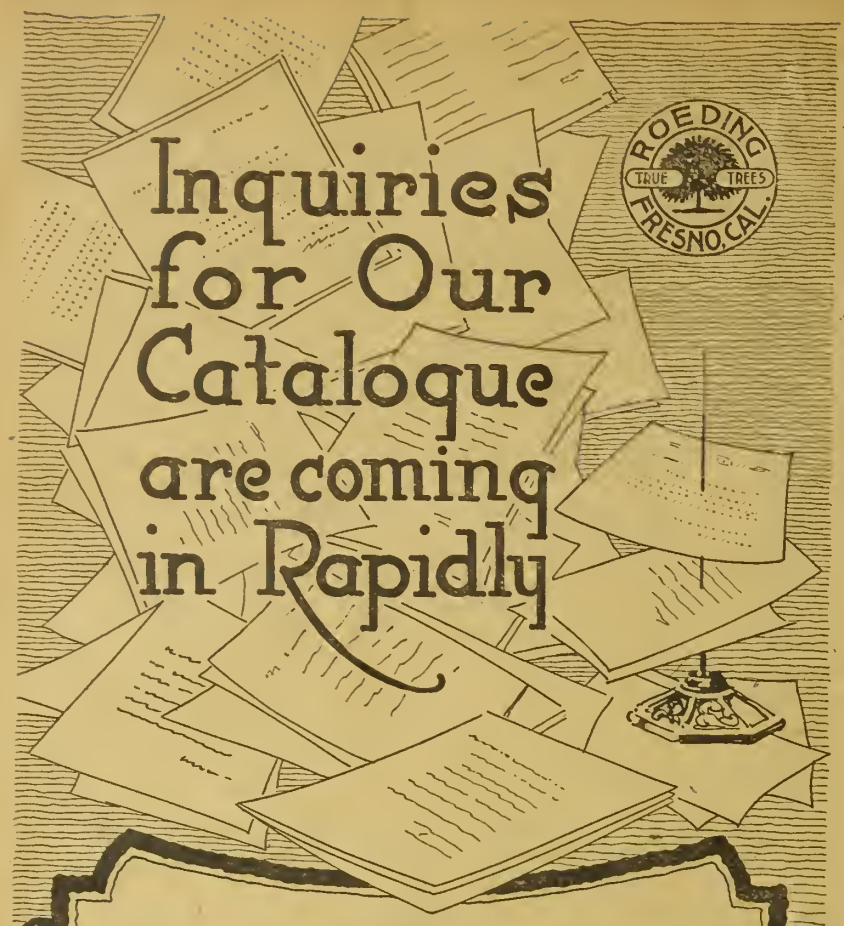
All this work of carrying the influences and comforts of home with the boys costs millions of dollars. Every dollar spent for the work is from voluntary contribution. The funds are exhausted now. They must be replenished. The amount necessary to carry the work forward is $170,500,000. To secure this sum the different agencies have consolidated at the request of President Wilson, in the United War Work Campaign. From November 11 to 18 the American people will have an opportunity to contribute to this fund.

In the different Liberty Loan drives, the Red Cross, the Y. M. C. A. and other campaigns, the farmers of America have demonstrated their loyalty, their staunch patriotism, and their financial strength. The United War Work Campaign is a direct appeal from the farm boys in the training camps and trenches to the farm folks at home. The comforts afforded the boys by the secretaries and the huts is the best proof we can give them that we are backing them to the limit. I am confident that the farmers of America will come forward with funds not only to take care of their own boys, but hundreds of thousands of dollars besides to aid in the general relief measures of the United War Workers.

The greatest sum to be collected in voluntary contributions at any time in the history of mankind is that to be raised in connection with the United War Work Campaign, November 11 to 18. This campaign is to obtain a fund of at least $170,500,000, to be divided on a satisfactory basis among the seven organizations recognized by the war department for serving the American soldiers and sailors at home and overseas. These seven agencies have been requested by President Wilson to unite in one campaign, rather than to have seven successive separate drives in the late autumn and early winter. The president felt that this arrangement would be a great saving in time and energy, and that it would be welcomed by the American people, not only for this reason, but also as affording an additional evidence of the patriotic duty of the entire nation.

To insure such a vast sum as $170,500,000 requires that every loyal American man, woman and child cooperate. Owing to the constant growth of the American army and navy, it is most desirable that there be a large over-subscription. This will not be accomplished without the most liberal giving on the part of the people everywhere.

No section of America has manifested a larger patriotic interest in this war than the rural population.



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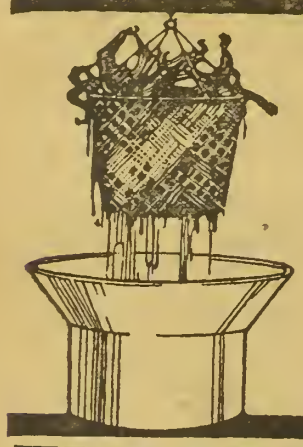

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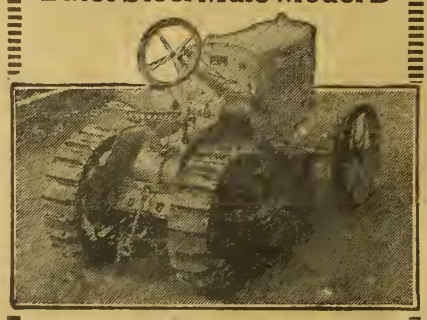

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Eradicating Citrus Canker

By Karl F. Kellerman, Associate Chief, Bureau of Plant Industry, U. S D. A.

FOR a little more than two years the federal government and the Gulf States have been engaged in a joint campaign for the purpose of eradicating from the United States the disease of citrus fruit and trees called citrus canker.

This undertaking is unique in character in that it is the first instance of the use of federal funds appropriated specifically for the eradication of a plant disease. It is of overwhelming importance to the citrus industry because citrus canker has been recognized as the most contagious of all known plant diseases and the most destructive to commercial values.

Citrus canker is probably a native of Korea or China from where it was introduced into Japan.

In 1913 and 1914 efforts were made by the state inspectors to check the spread by complete defoliation and applications of strong Bordeaux. These treatments were ineffectual. The plan of spraying infected trees with oil and burning was then originated. This was first done by private subscription. Later the secretary of agriculture recognizing the fact that a severe epidemic menaced the citrus industry, promulgated a quarantine and appealed to congress for aid. The federal horticultural board cooperating with officials of the Gulf States made a rapid inspection. The disease was studied in laboratories of the United States department of agriculture and the state experiment stations.

If a tree is found to be infected with citrus canker the wisest course to pursue is to burn it at once. This method of eradication is used throughout the affected region of the South.

Inspectors wear overalls which completely cover their regular clothes. These are disinfected in a 1 to 1000 solution of bichloride of mercury before entering and after leaving citrus property where the disease occurs. Shoes, hands and face are also disinfected.

Cost of conducting work of this character is very heavy, but, in view of the magnitude of the industry involved, the total sums expended to the present time represent but a small fraction of one per cent of the capitalized values that are threatened, and the continuation of the work appears to be both essential and well justified.

There remains always the hope that some less drastic method of combating citrus canker may be discovered.

A New American Industry

Written for California Cultivator By F. H. Mason

SINCE the commencement of the War, which brought with it the isolation of the German supply, the United States has been rapidly building up a potash industry. Besides being the base of a large number of industrial chemicals, potash is one of the prime essentials of plant life, and therefore one of the necessary ingredients of all well balanced fertilizers. Soon after the commencement of the war, some of the German professors boasted that, if in no other way, Germany could bring her enemies to their knees by cutting off the only known extensive source of potash in the world, that of Strassfurt, and thereby so depleting their agricultural output that they would be unable to provide the necessary food for their people.

American ingenuity, however, has again proved too much for Germany, and it is beginning to look as though when the war is over we shall be independent of the German supply. What makes the achievement the more palmary is that this new industry has been evolved, not by the finding of any fresh big supply of potash in the United States, but by conserving small known sources of the material that, prior to the war, had been considered to be too trifling to be worthy of consideration.

The output of potash and potash material produced and marketed in the United States in 1917 was 126,577 tons, containing 32,366 tons of potash. This is an increase of more than 300 per cent over the 1916 output. Of this total, 63.9 per cent of potash — not potash material—was produced from natural brines, 11 per cent from kelp, 8.8 per cent from molasses residues from distilleries, 7.4 per cent from alunite, 5 per cent from cement fume, and 3.9 from other sources. In all there were 82 producers, but 36 of these operated on wood ashes, which contributed only 1.3 per cent toward the total. Only eight cement works of all those operating in the United States saved their potash, but many more either have installed or are installing plants to arrest the fume, so that in 1918 the potash from this source will be considerably increased. There were ten producers of potash from natural brines, but one of the largest deposits in the country, that at Searles Lake, San Bernardino County, California, was unavailable on account of litigation. This litigation has since been settled, and potash is now being obtained from Searles Lake, so the production from natural brines will be considerably increased this year. There is every reason to hope, then, that the output in 1918 will show as great an increase as did that of last year.

Killing Morning Glory

The ever recurring question as to killing out or controlling the morning glory pest is usually answered in the Cultivator by recommending the thorough use of a cultivator, or better still a weed cutter which is presumably the most satisfactory method. However, the questions continue to come as to chemical methods. We do not believe that a satisfactory chemical method has as yet been discovered. Of course there is the spraying with sulphate of iron, covering the ground an inch or two with salt, which of course poisons the ground for at least two years afterwards, spraying with arsenicals, and in fact many other methods. Consistent study has been given to this topic by Prof. G. P. Gray, chemist of the University of California. Prof. Gray has been working in connection with the Santa Cruz County farm bureau, certain members of which have given their lands for experimental purposes. The Farm Bureau Monthly says:

All of the owners agreed to let their morning glory patches grow to maturity from the middle of August until the middle of October. The material used for the control of this pest is an arsenical spray which has a more killing effect on mature plants than on young plants, and which must be sprayed on the plants during a foggy spell. If applied to the morning glory during clear warm weather, only the tops of the plants are killed, but if applied during two or three days of foggy weather it is absorbed by the plant and taken to the roots where decay sets in during the following week or ten days. The cost is around $5.00 per acre.

Another remedy, claims for which may perhaps be taken with a grain of salt, is taken from a daily paper:

"The planting of tomato vines will eradicate the morning glory pest that has been menacing the bean crops of Southern California is the information that has been announced from Ojal. This discovery was the result of five years' careful experimentation. We had a theory there is a natural law of antagonism between plants, and that where one is a pest there can be found another that will eradicate it.

"The experiments show that if a tract of land is planted in tomatoes, the morning glory will not grow there.

Heider

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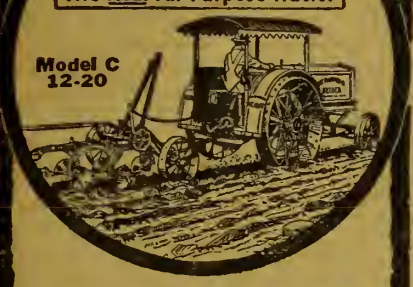

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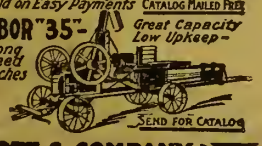

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Too many men salt away money in the brine of other people's tears.

There is more power in kindness than there is in dynamite, but it takes longer to develop it.

So if the bean growers will give up sections of their acreage each year to tomatoes they can get rid of the pest and at the same time raise a profitable crop."

THE RAISIN SITUATION

Thousands of tons of raisins are developing fermentation on the trays because of poor drying weather. From observations made upon the rain damaged prunes in Santa Clara County and upon the Thompson Seedless grapes in Sutter County, Prof. W. V. Cruess of the college of agriculture of the University of California recommends that where artificial evaporators are not available the raisins be exposed to the fumes of burning sulphur for three hours to arrest fermentation. This will also hasten drying. Should the sulphured raisins develop fermentation later, the sulphuring should be repeated. This process will save the fruit that has not fermented so badly that it is no longer edible. Where sulphuring houses are not at hand, balloon hoods can be built of light wooden frames covered with roofing paper. Each hood can be made large enough to cover two stacks of trays about four feet high. These can be made in "knock down" form for convenience in storing after the season is over.

Tests are being made in the zymology laboratory at Berkeley to determine the value of the damaged raisins for syrup, alcohol, acetic acid and acetone manufacture.

WOOLLY APHIS

Denver Field and Farm refers to a method of control of woolly aphis which is certainly simple, harmless, and if effective, should lessen them especially in a country where freezing of the ground is possible. But in lieu of the freezing, California may be able to drown the pest. Field and Farm says: "There are two things this insect can not stand, one is freezing and the other is water. Let it be borne in mind that the woolly aphis winters over in the ground. Some of the insects crawl up the bodies of the trees in the summer but none remain above ground during the winter. Where the ground freezes a foot or two deep during the winter as it does in the northern tier of states very few survive and but little harm is ever done by this pest. By chance it has been found that where water stands around any of the trees in irrigating, the woolly aphis disappears."

FIGHT RODENTS TO SAVE FOOD

Systematic and organized campaigns in which the entire community is interested are suggested as means of successfully exterminating injurious rodent pests on the farm by the bureau of biological survey of the United States department of agriculture. There are about 750 forms of rodents inhabiting the United States, and the annual loss which they cause in food and feed crops is estimated at fully $300,000,000. They feed upon crops in the field and in storage, in some cases destroy grass land so completely that erosion follows. In the irrigated sections of the West some species burrow through the dikes, releasing the water and flooding the crops. Methods of exterminating these pests by trapping and poisoning, which the individual farmer as well as the community can employ, are told in Farmers' Bulletin 932, recently published by the United States Department of Agriculture, Washington, D. C. It will be furnished free on request.

PROPORTION OF FOOD FREIGHT TO TOTAL

Considerable light is thrown on food marketing problems by investigations just completed by the food administration which shows that from 10 to 15 per cent of the total railroad freight in this country is food or feeding stuffs.

Such facts lend added weight to the food administration's request asking every one to use home-grown products as much as possible, thus releasing railroad tonnage for speeding up war activities. Use of local food includes especially the perishable products, and implies the liberal canning of fruits and vegetables and the home curing of meat for family consumption.

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BLIGHT--The Pear-Growers' Nightmare

Several years since, it was our privilege to first make known to California orchardists the many advantages of the Jap root for pears, with the result that nearly all nurserymen now bud most of their pears on this stock. which is so much more blight-resistant than the French seedling or the quince root.

This season it is our great good fortune to announce one of the most important discoveries ever made in connection with blight control. If you are interested in pears, you must write now for our new booklet, which describes

U-SU-RI-EN-SIS

the new, practically blight-proof, Chinese seedling—incomparably superior to the Jap root—by use of which orchards are going to be made 75 per cent blight proof. Professor Reimer of Oregon, the highest authority on blight-resistance, recently stated that he believed the least resistant variety of this species more blight-resistant than the most resistant of any other known!

The only stock of U-su-ri-en-sis in an American nursery today is our own limited supply, from which we are reserving enough to plant 60 acres of our own orchard in the spring.

Because we do not know when we can again offer Usuriensis (owing to an uncertain seed supply) and because we desire to supply the requirements of as many orchardists as possible, in order to bring about a wide distribution of this most desirable species, we urge intending planters to send TODAY for the booklet, informing us of their probable planting for 1919.

The booklet may be worth thousands of dollars to you, if you intend to plant a large orchard. It's free, of course, but if you will take the trouble to give us the addresses of a few friends who will plant pears we will certainly appreciate it.

In addition to Usuriensis we have our usual fine stock of pears on Jap root, and a moderate quantity of superb apples and other stock.

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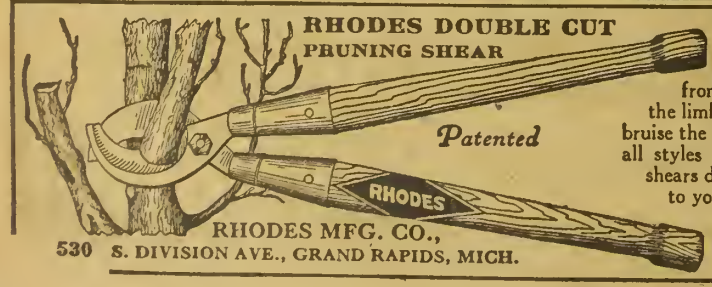

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Care of Sugar Beets

THE following information as to methods of preparing land for sugar beets, seeding and after care is from a circular issued by the Nevada-Utah Sugar Company:

While we advocate deep plowing of land for sugar beets, we do not want too much new soil. What we mean by this is that land having been plowed for some years—say five or six inches deep—we suggest that it be plowed not more than seven or eight inches because the new soil is not fertile and will require three years to do proper work. This new soil is thrown immediately on top in plowing so that the beet or other seed is planted directly in the unfertilized portion of land and therefore the tender plant will not make a proper growth. Land plowed—say two inches—deeper than formerly should be especially well worked so as to well mix the new with the old and better fertilized portions.

After plowing the land some farmers use an ordinary drag-tooth harrow, which smooths the ground until it looks quite even, therefore may be considered ready for seeding. Now the ordinary harrow puts its teeth from two to four inches into the ground. But what about the ground turned over, say from six to eight inches? The surface being smooth and fine does not mean that there are no openings or apertures deeper down. In many instances these apertures are what cause the tardy growth of many plants. Of course cereals root down but a few inches, but sugar beets root deeper until they find an opening not seen from the top, and it is then the plant is retarded and stunted and it at once begins to throw out small fibrous side roots seeking and fighting for life. I am sure you have pulled sugar beets, and other deeper rooted plants, when you have found side by side, the one has made a long and direct growth while its neighbor is much shorter and has, perhaps hundreds of small side roots as they have shot out prompted by nature, seeking for strength and life. The former makes a rapid growth and matures splendid weight while the latter is weakly and puny and not only fails to make the weight desired but is of inferior quality. What we want and must have to insure the best results is deep cultivation of the soil before the seed is planted.

All plants depend on their roots for power to grow and properly mature, and if stunted by reason of having to fight for life, failure is the inevitable result. It is just as necessary to fill the apertures at a depth of eight inches as it is to a depth of two inches. We admit that air is essential to plant life but too much air dries out and consumes the moisture, causes the plant to wilt and spend its energies fighting for existence, whereas proper cultivation of the soil before seeding will obviate this waste of time and tonnage. Land should be fairly well packed or at least well pressed together before any kind of seed is put into the ground. Let me call your attention to the head-lands of your fields. Wherever there is a shortage of moisture the seeds fail to germinate, and there is a poor stand, while at either end of the head-lands, the stand is good. Here is the proof, and so why not make the entire tract firm at least and thereby obtain the results desired? When you think the land fairly well prepared go over it once more. Horse power is cheap and every time you go over the land with a proper implement you increase the tonnage no matter what sort of crop you have planted or will plant, but especially is this true of sugar beets. Beets should not be planted more than about two inches deep, and since it must have some moisture to germinate we can see at once the importance of properly preparing the seed bed before seeding.

Of course different kinds of soil require different treatment. Sandy soil can hardly be worked too much while the heavier soil must be worked when its condition is right. If worked when too wet it will pack and become hard, having many hard particles, very little real fine dirt, which renders it almost worthless. At least the best results cannot be expected.

I have been asked time and time again, "How many times should beet land be cultivated after the beets are well put and ready for work?" To this question I always ask the person seeking information how many tons of beets he would like to harvest. Each time you go over the land with a proper beet cultivator increases the tonnage. Let me call your attention to the way the ordinary gardner operates. He is always stirring the ground with a garden hoe. As a matter of fact it is generally conceded he usually gets more truck off an acre of land than anybody in the neighborhood. The only reason is that he is constantly stirring the land; inviting the nitrogen into the ground. He keeps the weeds down, preserves the moisture and strength which go directly into the plant he wants to mature. He gets the results as we well know. Cultivate the beets. Then cultivate them again and again and you will be more than paid for every time you do so.

Early thinning of sugar beets is especially desirable. In a test made some years ago on an acre tract the following results were obtained: One-third of this tract was thinned at an early stage. From this one-third acre were harvested 15 tons of sugar beets per acre. Seven days later the second one-third acre was thinned, which yielded at the rate of about 12 tons per acre. While seven days later the last one-third was thinned which yielded at the rate of about nine tons per acre. The entire tract, other than thinning was handled exactly the same way. This is very substantial evidence that early thinning is necessary.

Cotton Growing in California

Only nine years ago the entire cotton crop of California was purchased by the California Cotton Mills Company of Oakland for $14,000. Since that time, however, the cultivation of cotton has rapidly increased until this year there are planted in the Imperial Valley and other sections of California, more than 135,000 acres in cotton. The value of the crop this season at present prices will be over $20,000,000.

The rich soil of the Imperial Valley of California, a few years ago a desert, is now the richest cotton-growing section of America, the yield per acre being nearly two and one-half times that of the total average of the United States. Its yield is only exceeded by the rich Delta lands of the Nile in Egypt.

During the first years when cotton growing was in its experimental state, the farmers were handicapped for lack of facilities for ginning the cotton, also for stripping the linters from the cotton seed and utilizing the cotton seed and the cotton oil and other by-products. However, as the cultivation of cotton has increased, these facilities have grown rapidly until now there are nearly a score of cotton gins in the Imperial Valley and cotton seed products are a valuable by-product.

Cotton is a crop which, raised in the same soil year after year, rapidly decreases in output unless the soil is fertilized from year to year. The water used for irrigation in the Imperial Valley and Southern California sections is drawn from the Colorado River. This water is full of a rich silt washed down by the river which spreads over the soil through irrigation and supplies both irrigation and fertilizer at the same time. Government experts figure that there is about $1.20 worth of fertilizer in every acre foot of water used for irrigation.

Cotton is a crop that is very easily damaged or deteriorated by drouth or excessive moisture. The cotton-growing sections of Southern California are peculiarly favored in that while they have almost no rainfall they have abundant water for irrigation and have the supply of moisture regulated to suit the needs of the growing crop. These advantages combined with a warm climate and long hours of sunshine make this district an ideal cotton-growing section.

At present prices the farmers are all making money and there is little doubt that cotton growing is destined to be one of California's largest industries.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Tax on Homestead

Referring to the paragraph "Tax on Homestead" in California Cultivator October 18, you seem to imply that the settler who has received from the government final certificate becomes actually the owner of the land, and that the land is therefore rightly subject to taxation. As a matter of fact, however, possession of final certificate does not amount to ownership of land. The government permits sale of the land, or mortgage by settler—but only under restrictions. He cannot sell outright, but only to persons legally competent to file on land—homestead or desert entry—said purchaser is not, in fact, a purchaser, but must take the land as an assignee. Title insurance companies in making the transfer, vest the title of the land in the government, not in the possessor of the final certificate. As for mortgages, theoretically the land may be mortgaged. In practice, however, the trust companies of California, wise as to the methods of the interior department, will not lend on land still under its jurisdiction. I, myself, have had for almost 16 months, final certificate to a quarter-section taken up under desert entry laws. A muddle and change of purpose about resurvey in the land office at Washington has held up my patent. It may be held up indefinitely, the land office refusing to give me any satisfaction, further than that the issue of patent will be taken up in "regular course of business." Although land in this district is in great demand, agents tell me there is no use attempting to sell or raise money on my place until I get my patent. I am therefore unable to develop the land and am losing the chance to raise valuable cotton crops. Nevertheless, I find myself taxed on the land. How can the state and county make this stick? Since they cannot acquire title from me, they would have no title enabling them to sell at public action. How can they sell land whose title vests in the government of which, since it was withdrawn for resurvey, they do not yet know the description or boundaries? —Subscriber, Blythe.

The vital distinction is between the right of the government to be relieved of taxation and an exemption from taxation for the individual occupant of government lands. As to lands owned by the United States, commonly known as the "public domain" the state has no right of taxation, but the state has the right to tax any interest possessed by an individual therein. Thus, when the individual has entered the land at the land office, paid for it, or fully completed his residence or improvements, and a certificate has been given to him, the contract between him and the government is executed and the land belongs to him, the government holds only the dry legal title in trust for him; in other words, the land is segregated from the public domain and is thenceforth private property. But to bring the land to this status the equitable title must be perfect and complete without further act to be done by the entryman; hence, the land is not subject to taxation before its survey and the approval of the survey, nor in the case of a homesteader is his interest taxable before he is entitled to make final proofs.

However, an entryman upon public lands thereby acquires certain individual property rights; he acquires a possessory interest in the land which is recognized. This possessory interest which the individual may hold in the public lands of the United States is taxable as it is individual property. This applies whether the interest is for mining, agricultural, or other purposes.

The Political Code of California defines real estate for the purposes of taxation as follows: "The possession of, claim to, ownership of, or right to the possession of land; all mines, minerals, and quarries in and under the land, all timber belonging to individuals or corporations growing or being on the lands of the United States, and all rights and privileges appertaining thereto.

The section of the Political Code under which answer is made as to the title procured by the state under the tax sale which is 3805a, provides: "Whenever the possessory interest in land belonging to the United States is sold for delinquent taxes upon verified application of the owner of the land, the board of supervisors may direct the cancellation of the assessment, except in cases where the applicant would be relieved from paying taxes for the full time of his possession of the property." So it is to be seen that it is in fact, the possessory interest which is sold, and this tax sale would form a lien against the property whenever the title was acquired by patent duly recorded from the government.

Married Woman's Estate

A lady has money and property from her first husband. What part of her money and property can the second husband get-—Subscriber, Modesto.

In case she survives her second husband he can get none which she does not voluntarily give to him. In case he survives her and she leaves no will and the money and property is all within this state, she being a resident of this state at the time of her death, and there are no children of either marriage, the husband is entitled to one-half of her money and property; if the real property is in some other state, it will be dealt with in accordance with the laws of that state; if she was a resident of another state at the time of her death the personal property will be dealt with according to the laws of that state. If she leaves a will, according to the laws of nearly all, if not all the states, she can dispose of her property as she sees fit.

Every dollar that is spent to arm a soldier or a sailor, to feed or clothe one; every dollar that is spent for munitions or cannon, for coal to drive our warships, and transport supplies, must come from the treasury, and the treasury has no source from which to obtain money except the people of the United States.

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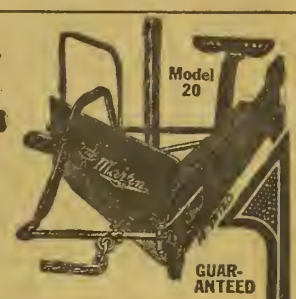

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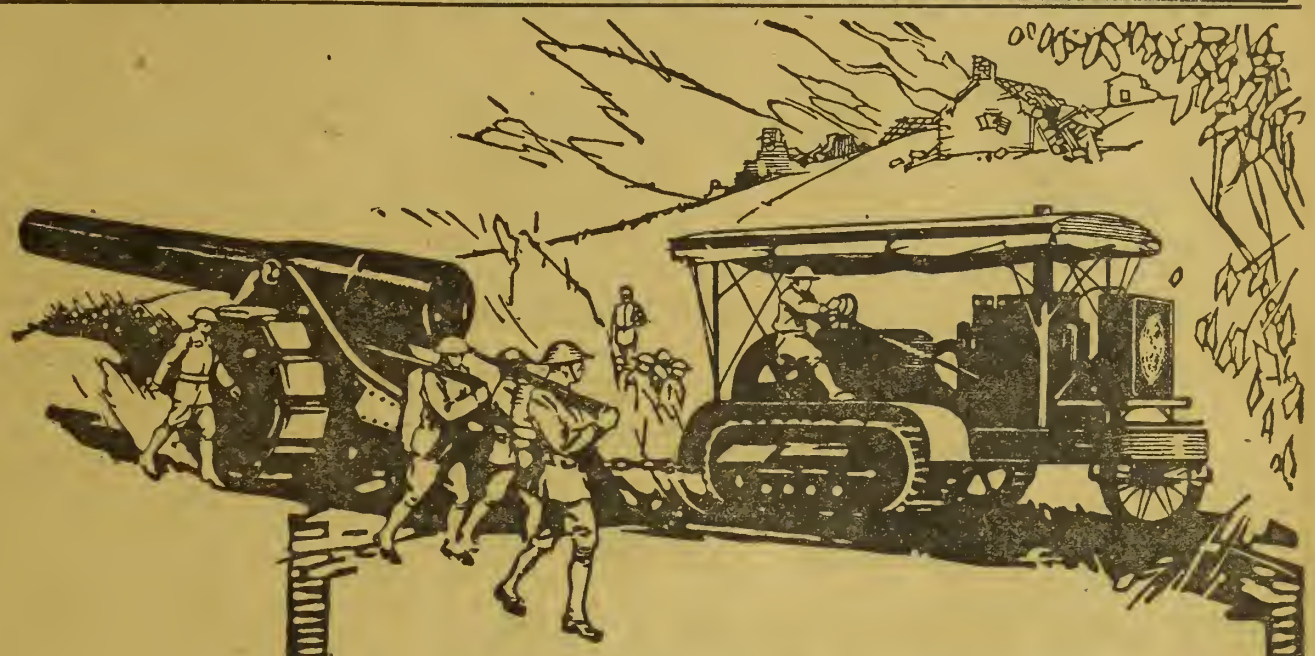

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Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Estimating Weight of Stover

How many cubic feet of dry corn or sorghum stover will it take to make a ton? How long would it settle?—Subscriber, Palmdale.

We have no information as to number of cubic feet in a ton of corn stover. As we have given many times the cubic feet per ton of hay or straw will vary from 300 to 500 according to the stamping done when stacking or mowing, the fineness of the hay or stover, and still more, the length of time it has been settling. Estimating weights is not satisfactory at best, though a man with good judgment and knowledge of conditions can make a reasonably close guess. See suggestions in "Rules for Measuring Hay," on Page —.

Poultry Ticks

I am enclosing a specimen of bug found in an old chicken house we tore down. It is new to me. What is it?—Subscriber, Gorman.

This is the poultry tick, hardy enough to live the entire year without food and very insistent on continuing to live in old poultry houses. If buildings are of little value the pest can best be eradicated by burning the old buildings and the old lumber around it. In any case burn all nests and needless lumber and fill cracks and biding places where the ticks congregate with crude oil, turpentine, benzine or a carbolic soap dip. A final painting of all the old roosts and the side walls with hot coal tar is effective but hard on the light colored fowls. Spraying with a strong solution of sheep dip has also given relief.

Tobacco for Worms

For worms in chickens a pamphlet published by the experiment station advises giving one pound tobacco stems soaked and stewed for about two hours for 100 fowls. I cannot secure tobacco stems but can get powdered tobacco. How much powdered tobacco would you say should be used?—Subscriber.

This question was referred to Prof. J. E. Dougherty of the Davis university farm, and he writes:

"Powdered tobacco may be quite a different product from finely ground tobacco stems. In the treatment of round worms in poultry, it is desirable to use a tobacco product containing a minimum of nicotine. Our investigations have indicated that tobacco itself contains too much nicotine for the purpose, whereas tobacco stems contain a sufficiently small amount of nicotine together with the very desirable properties of the tobacco which render these stems very effective for the treatment of worms. We have found the dust somewhat more desirable than the tobacco stems because it runs more evenly."

Poultry Feeding Costs

What is the average cost or how much feed does it take to keep a hen, such as Rhode Island Red or Plymouth Rock, a year? How much, a Leghorn hen? How much, a pullet from time of hatching until she begins laying? How much, a turkey from time of hatching in the spring until marketed in November or December, and what should a turkey weigh at that age?—Subscriber, Woodlake.

According to the food record of the All Northwest Laying Contest for the month of July, it costs 33.14 cents to feed a Rhode Island Red hen for a month, which would be about $4 a year. A Barred Rock cost 37.89 cents for one month, or approximately $4.50 per year. Records kept by the Connecticut station in 1915 showed that it takes 24 pounds of feed to bring a Rhode Island Red pullet to 24 weeks of age. At that time the cost of the 24 pounds of food was a little over a dollar. In 1918 it is considerably more. Just how much would be hard to say, for prices of feed vary from month to month and in different localities. I should not expect to bring a pullet of the heavy breeds to laying age for less than $2.00. As for turkeys, it all depends on how much range they have. I have seen no

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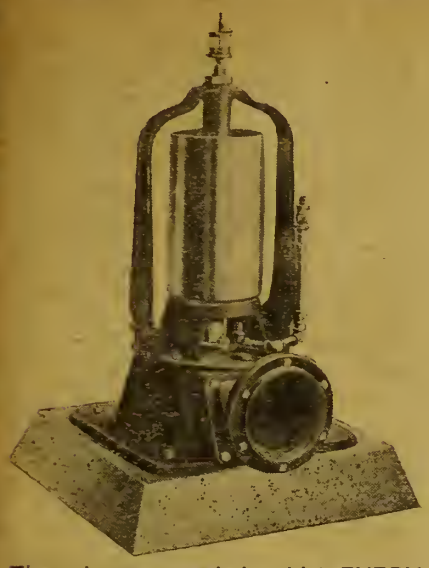

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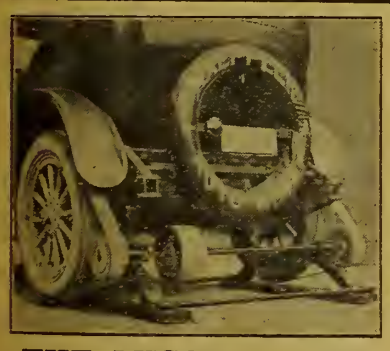

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Do not give the mower or reaper an oil bath at the beginning of the season and expect that to be sufficient Oil all bearings frequently and use a little oil each time.

figures for turkeys since war prices came in, and should not dare to guess. A tom turkey six months old usually weighs from 16 to 20 pounds; a hen, from 9 to 11.—J. A. K.

Symptoms of Tuberculosis

Symptoms of tuberculosis are emaciation (going light), lameness, and a liver studded with yellowish white cheesy nodules of various sizes. The first two may or may not indicate tuberculosis, for they are symptoms of other diseases as well. The condition of the liver is the most certain indication. Even then you cannot be positive without a bacteriological examination. Should you find a hen greatly emaciated, and on killing her find the liver covered with these white nodules, and should you have a suspicion that other birds were similarly affected, you would be justified in asking the state experiment station to make a bacteriological examination for you. If only a single hen is affected, take it for granted the trouble is malnutrition or something of a less serious nature than tuberculosis. The lungs are very rarely affected. Isn't it possible you make the tobacco tea a little too strong, or that some hens get more of the mash than others, and have been upset by it? Tobacco is poison, you know, and it doesn't take a very big dose to kill an animal.—J. A. K.

Poultry Literature

Where can I get best literature dealing with poultry raising, giving information as to care of chickens, cost of keeping them, different breeds, the egg laying qualities, which breeds have quickest growth, best breed for market broilers, etc.? What is considered the best breed for broilers? What is the leading breed for laying? Can I get literature from the government and whom should I write? Can I get literature from University of California and whom should I write? Where can I get literature dealing with capon raising and what is the best breed for capons? What is the average price that capons bring on the San Francisco market in the winter or early spring, also late spring? How much feed does it take for a capon from hatching early in spring until marketed at a year old?—Subscriber, Woodlake.

The Cultivator poultry book, "Poultry for Profit," gives most of the information you need for raising chickens, but it was written before America went into the war and its figures for cost of raising and keeping chickens need revision. The leading breed for laying so far is the White Leghorn. For small broilers there is nothing better than this same White Leghorn. For the larger broilers and fryers Orpingtons, Rocks and Wyandottes are preferred. You can get government literature by addressing United States Department of Agriculture at Washington, and state experiment station literature by writing the College of Agriculture at Berkeley. I have written to San Francisco to find out the average price which capons bring, but receive no answer. Will try again and let you know. The best breed for capons is probably the Light Brahma, though a cross of Light Brahma on Wyandotte or Rock is considered excellent. I think it would cost at least as much to feed a capon for a year as a laying hen. The Beuey Capon Book is sold by the American Poultry Advocate, Syracuse, New York, for 25 cents.—J. A. K.

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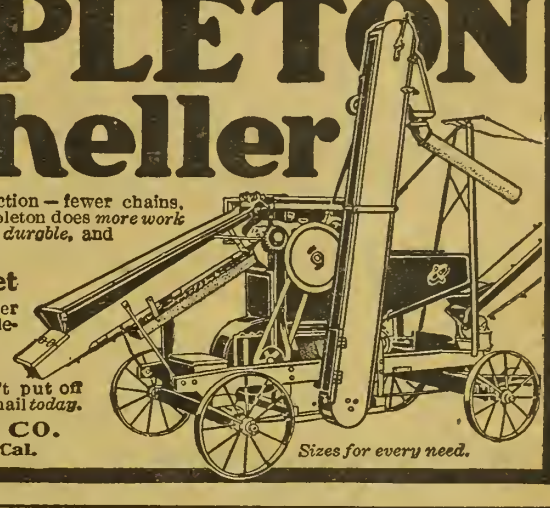

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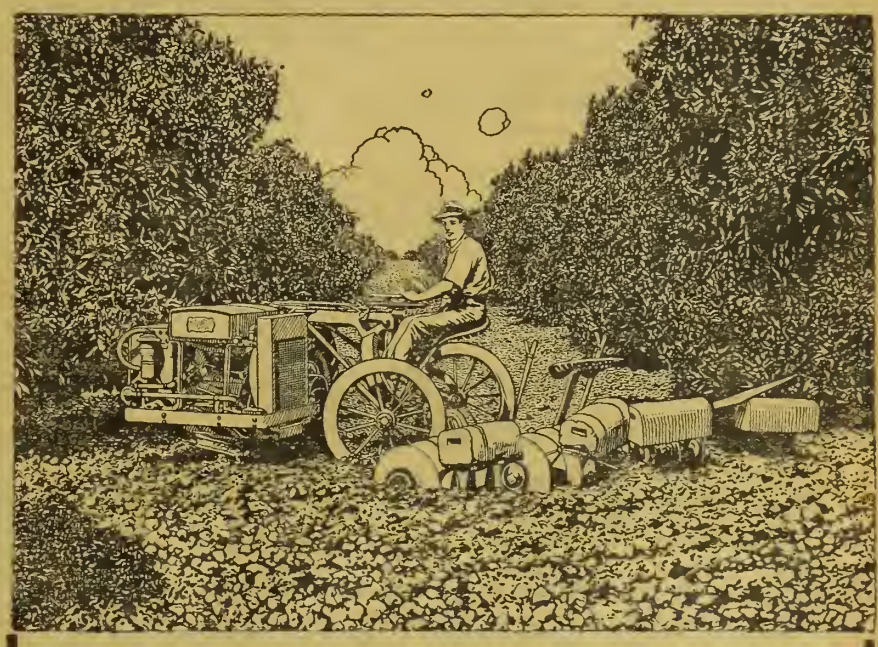

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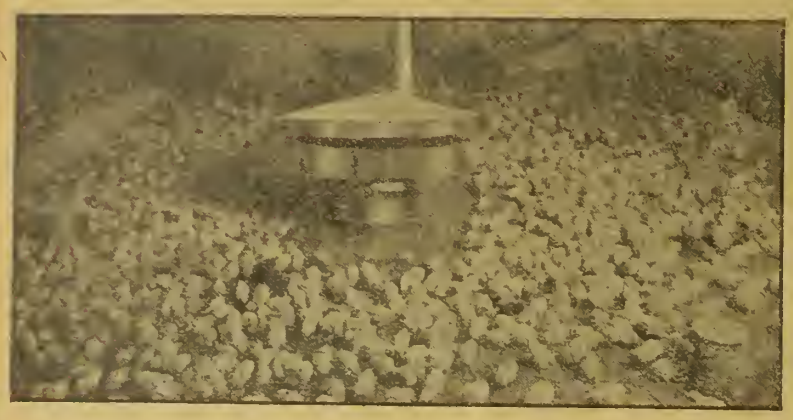

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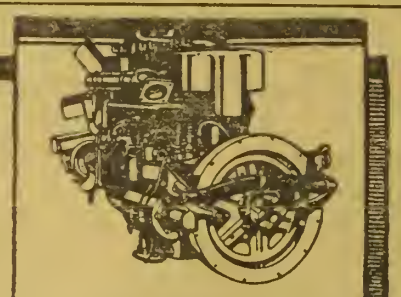

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Use Standard Poultry

STANDARD poultry, as the phrase is commonly used in America, is poultry bred to the standards established by the American Poultry Association. The object of making standards for poultry is the same as the object of making standards of weight, volume or quality for any product or commodity, i. e., to secure uniformity and establish a series of grades as a basis of trading in the article.

In making standards for poultry which apply in the process of production the principal points considered are size, shape and color.

Breed Characters

Size and shape are breed characters and largely determine the practical values of poultry. Many standard breeds are divided into varieties differing in color, but identical in every other respect.

Color is not a primary utility point, but as a secondary point often comes in for special consideration. For example, a white variety and a black variety of the same breed are actually identical in table quality, but because black birds do not dress for the market as clean and nice looking as white ones, it often happens that they are not as salable.

When a flock of fowls is kept for egg production only, uniformity in color is much less important than approximate uniformity of size and type, yet the more attractive appearance of a flock of birds of the same color justifies selection for color as far as it can be followed without sacrificing any material point.

When a poultry keeper grows his own stock year after year he ought by all means to use stock of a well established popular standard breed. By doing so and by selecting as breeders only as many of the best specimens of the flock as are needed to produce the chickens reared each year, a poultry keeper maintains in his flock a highly desirable uniformity of excellence in every practical quality, and with little extra care and no extra cost can have a pleasing uniformity in color.

Each Breed Has Its Place

To the novice in poultry keeping it often appears that there is no real necessity for so many breeds and varieties as have been standardized in America. Further acquaintance with them, however, shows that although color differences are in most cases made merely to please the eyes of persons having different preferences for color, the differences in shape and size which make breed character have been devoloped with a view to adapting each to particular uses or particular conditions.

Leaving out of consideration the breeds kept as novelties, most of which originated before industrial progress created a large demand for poultry products, all the standard American breeds of fowls have been made and developed on the general principle of practical quality, the foundation of breed character and value.

Classification of Useful Breeds

In harmony with this principle the common classification of breeds according to their place in the general scheme of poultry production divides them into three principal classes, namely, laying breeds, meat breeds, and general purpose breeds—that is, breeds that are not as ready and persistent egg producers as the laying breeds, and not as meaty and as easy to fatten as the meat breeds, yet combine in one individual fowl very good laying capacity with very good table quality.

The Leghorn, Minorca, Andalusian, Ancona and Campine are well known breeds of the laying class; the Brahma, Dorking and Cornish of the meat class; the Plymouth Rock, Wyandotte, Rhode Island Red and Orpington of the general purpose class.

Characteristics of Egg Breeds

The breeds mentioned as of the laying class, with the exception of the Minorca, are relatively small, very energetic and lively, mature early and are easily kept in good laying condition. The Minorca is of larger size and modified somewhat in the other particulars mentioned, yet has more the character of the laying class than of any other.

Characteristics of Meat Breeds

In the meat breeds there is not the same uniformity of type that is found in the laying breeds. The three mentioned are all quite different. The Brahma is most popular because it is at the same time the largest and most rugged in constitution. The Dorking excels in quality of meat but is generally considered somewhat lacking in hardiness. The Cornish is rather hard meated but being very short feathered has its special place as a large meat producing fowl in southerly sections where the more heavily feathered Brahma does not stand the summers well.

General Purpose Breeds

Among the popular breeds of the general purpose class there are also differences in type, adapting breeds to different uses. The Plymouth Rock is generally regarded as the type meeting the widest range of requirements in the general purpose class.

The Wyandotte is a little smaller and earlier maturing but still very well meated and easy to fatten.

The Rhode Island Red has nearly the same standards of weight as the Wyandotte but is a more active bird, not putting on fat so readily; consequently it approaches the laying type and is popular with those who want eggs and meat, but want eggs most.

The Orpington is at the other extreme in the general purpose class, being a heavier, meatier fowl than the Plymouth Rock.

A Breed for Everyone and Every Purpose

Such a list of breeds affords so wide a range of choice that poultry keepers can always select a standard breed better adapted to their locality and their purpose than any nonstandard stock they can procure, and having the further advantage of reproducing true to type.

EVEN A CHICKEN CAN HELP

One night recently when the men at work at the Vallejo Mills of the Sperry Flour Co. were unloading a car of wheat just received from the Sacramento Valley they found a healthy Plymouth Rock hen in one end of the car. The hen was well fed because it had lived and thrived on wheat during the time the car was in transit. The men at the Sperry Mills did not know what to do with the hen until Louis Vierra, one of the employes, thought it a good idea to raffle it off and turn the proceeds over to the committee for relief in Belgium and France. The Sperry employes took to the idea at once with the result that $46.40 was raised during the raffle and promptly turned over to the committee for relief in Belgium and France. Then the employes unanimously decided if "Matilda," as the hen had been named, could be the means of raising so much money at the Vallejo Mills, similar raffles should be held at all the other Sperry mills and offices in California. The hen was then shipped to the Sperry family at Stockton, where $43.50 was raised, and from there to Sacramento, Fresno, Los Angeles, San Jose, Oakland and San Francisco. Raffles were held at each place by the employes of the Sperry Flour Co., with a result that several hundred dollars has been donated to the good cause of rescuing and feeding Belgian babies.

THE YOUTH'S COMPANION

is worth more to family life today than ever before. Today, those who are responsible for the welfare of the family realize the imperative need of worthwhile reading and what it means to individual character, the home life and the state. Everywhere the waste and chaff, the worthless and inferior, are going to the discard.

The Youth's Companion stands first, last and continually for the best there is for all ages. It has character and creates like character. That is why, in these sifting times, the family turns to its 52 issues a year full of entertainment and suggestion and information, and is never disappointed.

It costs only $2.00 a year to provide your family with the very best reading matter published. In both quantity and quality as well as in variety The Youth's Companion excels.

Don't miss Grace Richmond's great serial, Anne Exeter, 10 chapters, beginning December 12.

The following special offer is made to new subscribers:

1. The Youth's Companion—52 issues of 1919.
2. All the remaining weekly issues of 1918.
3. The Companion Home Calendar for 1919.

All the above for only $2.00, or you may include

4. McCall's Magazine—12 fashion numbers. All for only $2.50. The two magazines may be sent to separate addresses if desired.

The Youth's Companion, Commonwealth Avenue and St. Paul Street, Boston, Massachusetts.

Highest Record Jersey Bull in State

A REGISTERED Jersey bull of outstanding breeding and very high excellence of type has taken his place at the head of C. D. Hayworth's Rico Vegas herd at Modesto, and as his dam is the second highest record senior three year old of the breed his coming is of more than ordinary importance to the dairy interests of California.

Silken's Golden Glow Chief is the name of the great youngster, and he carries a preponderance of the blood of Golden Glow's Chief, who has 35 Register of Merit daughters and four proven sons, 30 of his daughters, ranging in age from yearlings up, having Register of Merit records averaging 10,223.26 pounds milk and 704.73 pounds butter in one year.

The sire of Silken's Golden Glow Chief is Morning Glow's Chief, who is by Golden Glow's Chief and out of Chief's Morning Glow, a daughter of Golden Glow's Chief and Birdie La France, with a record of 8874.20 pounds milk and 638.61 pounds butter in one year. Chief's Morning Glow it will be noted is out of the same dam as Sugar-in-the-Barrel, who is the dam of Vive La France, 12,744.8 pounds milk and 1115.79 pounds butter in one year, the world's junior three year old record.

The dam of Silken's Golden Glow Chief is Lady's Silken Glow who made a Class AA Register of Merit record of 9686.20 pounds of milk and 777.88 pounds of butter at two years five months of age, and came back at three years nine months, with another Class AA Register of Merit record of 13,305 pounds milk and 1103.20 pounds butter, which is the highest on the Pacific Coast and second highest for the Jersey breed in class. She is by Pride's Olga 3d's King, who already has 15 Register of Merit daughters, and he is by Pride's Olga 4th's Son and out of Pride's Olga 3rd, thus carrying in the closest manner the blood that produced Olga 4th's Pride, 16,275.8 pounds milk and 1064.75 pounds butter in one year. The dam of Lady's Silken Glow is Lady Mollie Moore, 8296.6 pounds milk and 567.75 butter in one year, who in turn is by Golden Glow's Chief and out of Lady Glow, 6912.3 pounds milk and 647.80 pounds butter in one year, who is also a daughter of Golden Glow's Chief.

The three nearest dams of Mr. Hayworth's bull average 10,158.6 pounds milk and 769.85 pounds butter in one year, including the three year old record of his dam, who is expected to still further increase her record.

Silken's Golden Glow Chief finds a worthy home in Rico Vegas herd. When Mr. Hayworth started in with registered Jerseys some years ago he was in possession of most limited capital and set out to carve, or rather milk out, his fortune through registered Jerseys on a 44-acre farm. The farm is now one of the best in the rich Wood Colony section of the Modesto district, and the Jersey herd ranks among the very best in the state. There are now 15 Register of Merit cows in the herd, and from these there is a very choice group of heifers sired by Lorna's Altama Interest, who is by Guy H. Miller's famous breeding and show bull Altama Interest and out of Miller's grand champion and gold medal cow Lorna of Venadera, who has a Register of Merit record of 11,234.1 pounds milk and 735.25 pounds butter in one year. His first daughters in Mr. Hayworth's herd are unusually promising those that have completed the Register of Merit records at first calving averaging 6715.8 pounds milk and 445.9 pounds butter on two time milking and ordinary dairy feed.

Silken's Golden Glow Chief was selected by Mr. Hayworth only after a most painstaking search for a bull to meet his requirements, and he was purchased at the end of a long journey that his new owner made in order to inspect not only the bull himself but particularly the dam. It will be noted from the picture of the dam which accompanies this item that she possesses a wonderful amount of type, and that she has a most beautifully hung udder with well placed teats of good size. Among her many other accomplishments she won the butterfat contest at Oregon state fair over 27 entries of all breeds.

Lady's Silken Glow

At two years five months: Milk 9686.2 pounds, butter 777.88 pounds. Register of Merit Class AA. At three years nine months: Milk 13305 pounds, butter 1103.2 pounds. Register of Merit Class AA. Her butter record is highest on Pacific Coast and second highest of the Jersey breed in class. She is dam of Silken's Golden Chief now heading the Rico Vegas herd of registered Jerseys, owned by C. D. Hayworth, Modesto.

Proven Breeders Are Best

At first thought, the man making his plans to enter the pure bred live stock business is very apt to think it good business to make his initial capital buy as many individuals as possible and with that idea in mind he probably will decide to buy young females and a young male rather than "lay in" older animals at a higher cost. Such a plan is ill advised. A much better plan is to select older animals and if possible select an animal that is a proven breeder even though the price asked seems high. By making purchases along such lines the element of chance is largely eliminated and the buyer can count with more certainty on satisfactory results.

The majority of successful breeders of cattle, beef or dairy, hogs or sheep, advise the beginner to invest his money in fewer numbers of better quality.

It is not always possible to pick up proven breeders, but if one takes time (and one should take plenty of time in establishing a herd or flock) there will be opportunities. From time to time established and successful herds are dispersed for legitimate reasons and these dispersions furnish the opportunity to make selections of the better animals in the herd.

It also happens quite frequently that a breeder finds it necessary to sell a successful sire on account of wanting to keep his daughters. That fact alone is usually a good reason for buying such a sire. Again, a breeder may decide to put in one or more of his

A DUROC OPPORTUNITY

H. P. Slocum & Son

Must Sell

150 Head of Modern Durocs

The junior member of the firm has been placed in Class One-A and is expected to be called any time. Because of his age, the senior member can not undertake to carry on the herd, and for that reason it has been decided to close out the entire herd.

The Best Blood of the Breed

It is generally admitted that no herd in the West is superior in point of breeding or individuality. We have the blood of High Orion; Great Wonder; Giant Invincible; King Orion Cherry and King of Orions. There is no better breeding. We selected our foundation stock for size, prolificacy, quality and bone. Our herd produced more champions and prize winners at the 1918 California and Oregon state fairs than any other herd.

Read What We Offer

Three herd boars, including Uneeda Wonder, that Eastern breeders would price from $1500 to $3000 each. Herd sows that we have refused to price. Young gilts and boars sired by some of the greatest boars of the breed.

Everything Must Be Sold

Absolutely nothing reserved and everything is priced to move.

Write at once for prices.

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Percheron, Belgian and Shire Stallions

My new shipment of Stallions has arrived consisting of Percherons, Belgians, and Shires personally selected by me from the best breeding sections of Iowa, Illinois and Indiana.

Two, three and four year olds that weigh a ton or better. The heavy boned, clean legged kind with lots of style and action.

The largest collection of high class Stallions west of the Rocky Mountains.

Prize winners at this year's big Eastern shows. Life Insurance and State Certificate of Soundness furnished with every horse. If in need of a really high class Stallion come and inspect my horses or write for full particulars. I can suit you in price, quality, and terms.

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Aluminum bottoms, perfectly water-proof, two styles, removable steel calks or leather and fibre half soles and heels. Best water-proof uppers. Army style footform shape. Easy and durable. Rust and rot-proof.

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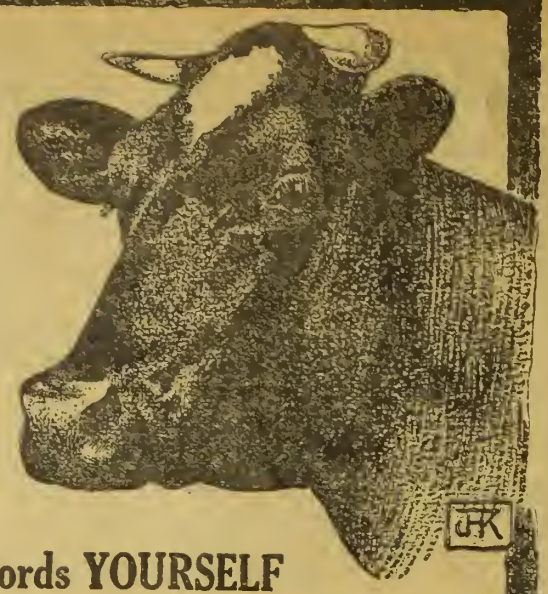
Perkins, Cal.

Record Holstein

This four-year-old is first of all HEALTHY. Her record shows it. Her yearly production record is 30,230.2 lbs. milk and 1,111.56 lbs. butterfat. Surprising results are possible if a dairy cow's condition is kept perfect.



Go After Records YOURSELF

Production records of dairy cows are not just to read about—they are distinctly worth trying for, this year more than ever.

The fact is, the health condition of most dairy cows is decidedly lowered, especially during the winter and spring months. They need some medicinal aid to keep their digestive and genital organs in proper working condition, and to enable them to throw off disease.

KOW-KURE, besides being invaluable in the treatment of Abortion, Retained Afterbirth, Scours, Barrenness, Bunches, etc., is also a great PREVENTIVE of disease—a conditioner that works on scientific principles. It strikes at the seat of ailments peculiar to cows. By raising the health standard, it directly aids nature in increasing the milk flow.

Use KOW-KURE this winter to keep your cows healthy and then compare your milk records with other seasons. KOW-KURE can be bought of feed dealers and druggists; 60c. and $1.20 packages.

Send for our Free Book
"The Home Cow Doctor"
—very useful to dairymen

DAIRY ASSOCIATION CO.
Lyndonville, Vt.

Be at Tulare

November 20-21, 1918

And be there early the morning of the 20th, for it is a two day sale and the good ones start under the hammer right from the jump.

125 Registered Holstein Cows, Heifers and Bulls

will go to the highest bidders in this sale, absolutely without reserve or limit, and there has never been a better balanced offering of high class registered Holsteins made in the state.

10 Consignors Contribute to this Sale

and there are first class attractions in every consignment, practically all choice young cattle, bred in the greatest producing lines of the Holstein breed and sold under conditions most favorable to the buyer.

The Highest Record Group of Reference Sires

ever listed in a western sale are represented in this sale, among them some of the most famous California herd sires, two 40 pound bulls, one 36 pound bull, three 35 pound bulls, one 32 pound bull, two 30 pound bulls, and many of them out of dams with records from 1000 to over 1300 pounds butter in one year.

Outstanding Females Both as to Breeding and Records

are in the sale, bred to the great reference sires just mentioned, including the highest record junior two year old ever sold in the west, daughters of cows with records up to over 31 pounds butter in seven days, young cows with records up to over 26 pounds butter in seven days, and a wealth of good breeding.

Bulls to Suit Any Breeding or Dairy Requirement

are in this sale, out of dams with records up to over 30 pounds butter in seven days, dams with over 29,000 pounds milk and over 1000 pounds butter in one year, and representing the best producing families of today.

Sold Under the Most Stringent Regulations

which positively guarantee every animal to be a breeder, either sex or any age; every animal over six months of age tuberculin tested and sold subject to retest by the buyer.

Management

California Breeders Sales and Pedigree Company

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Sacramento, California.

Auctioneers—Col. Ben A. Rhoades; Harold B. Rhoades.

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best females in a sale a an attraction.

It can be stated as a definite propositon that if one starts with a good quality of stock and is careful in the handling of them that he will always have good stock.

Another point the beginner should bear in mind is that a herd built from a foundation of comparatively few outstanding females is usually more successful than those built from a greater number of females, for the reason that with the first type of herd it is easier to find a sire that will breed uniformly.

Live Stock News Notes

San Francisco Live Stock Show Postponed to February 8

After carefully considering the influenza situation in Northern California, the management of the California International Live Stock Show, but recently postponed from November 2 to November 16, has decided that it will be to the best interest of all concerned that the show be again postponed to February 8.

By selecting a date in the early part of February the management is certain that they will escape any handicap resulting from the present epidemic, and by selecting the particular date of February 8 the San Francisco show will follow the Western Live Stock Show held at Denver in January, thus affording an opportunity to attract many of the exhibitors from the Rocky Mountain show, and will perhaps be able to stage a much stronger event.

Cochel Returns East

W. A. Cochel, Western fieldman for the American Shorthorn Breeders' Association, who was to judge Shorthorns at the Liberty fair, Los Angeles, has returned to the Middle West in order that he could attend the Shorthorn show and sale to be held at Kansas City, Missouri, during the week of the American Royal Live Stock show.

Mr. Cochel stated that in his opinion California was due for a tremendous live stock development during the next few years.

Professor Miller Accepts Texas Offer

Professor R. F. Miller, who for the past four years has been in charge of the sheep work carried on by the University of California, will leave about December 15 to become acting head of the animal husbandry department of the University of Texas.

Professor Miller is regarded as one of the leading sheep and wool experts engaged in college work and the service he has rendered the industry of this state has been of such a constructive and practical kind that his leaving will be a keen loss.

During the past year Professor Miller has been devoting a large part of his time in an effort to organize the sheep and wool industry on a war basis, and his work for distributing small flocks of sheep on the ranches of this state will continue to bear results that will mean much to California.

Miller's Shorthorns to Be Moved North

T. T. Miller, Los Angeles, plans to move his herd of Shorthorns to a ranch he has taken over near Hollister.

This herd has attracted a great deal of attention since it was established, something over a year ago. It is doubtful if any Western herd has been assembled with greater care, or has been founded with a higher class of cattle than has this herd. The greatest care was exercised in the selection of the herd material—both bulls and females, and as the herd stands now, it represents one of the choice collections of Scotch cattle to be found on this coast.

The senior herd bull, Diamond Goods is one of the good Bellows Bros. productions. He is a beautiful roan of considerable scale, very smooth, and is especially attractive about the head. He is sired by Good Choice, the Choice Goods bull that did service in the Bellows herd, and is out of a Queen of Beauty dam, that, by the way, is also by Good Choice.

Assisting the above bull, and considered by many to be a more imposing and valuable herd bull, is the white Greendale Sultan, sired by the great show and breeding bull, Lespedeza Sultan, and out of a Victoria dam from the Ed Hall herd.

This bull, showing in the two-year-old class, reminds one of his famous sire, being very much of the same pattern—plenty of scale, but in addition, is tremendously wide and remarkably deep and standing close to the ground.

The Miller females represent the very choicest of Scotch families and included in the herd are several foreign matrons with international reputations.

The herd is represented with a show string, now at the Liberty Fair grounds, Exposition Park, Los Angeles.

Guaranty Holstein Sale Postponed

The guaranty sale, scheduled for December 5 at Sacramento, has been postponed. One of the several causes of postponement was the difficulty in securing a large enough number of cattle that would meet the exacting requirements of this sale. For the first time in several years there will be no fall sale at Sacramento.

Banks Lend to Boys' Pig Clubs

Eight banks in California have loaned money to members of boys' pig clubs this year. The average amount loaned per bank is $409.39 and the average number of boys dealing with each bank is about 25.

California Headed for a Horse Shortage

The annual report of the California Stallion Registration Board has just been issued and contains some facts that should challenge the attention of all who are interested in farming and live stock production.

In 1912, the first year a report was issued, there was a total of 1957 licensed stallions in this state. Each succeeding year has seen a marked decrease. In 1913 the decrease was negligible, amounting to only 30 head; 1914 the decrease amounted to 18.1 per cent; 1915 the decrease amounted to 13.9 per cent; 1916 there was a decrease of 15.1 per cent; in 1917 the decrease jumped to 24.2 per cent; and in 1918 there were 31.2 per cent fewer registrations than the preceding year.

The 1918 report covers the registration of 590 stallions of all breeds, or about 30 per cent of the number registered in 1912.

The conclusion to be drawn from the above facts is obvious. Owners are not breeding their mares, and such a policy can only result in a very marked shortage of horses in the next few years.

The only hopeful feature of the report is the decreasing number of mongrel and cross-bred stallions applying for licenses. In 1912 41.4 per cent of the total number of licensed stallions were mongrels, cross-breds or nonstandard. In 1918 these "undesirables" had been reduced to 20.5 per cent.

In general, the number of jacks has been decreasing, but the decrease has not been so marked as with stallions.

Reports from stallion registration boards in other states show a decrease, but few, if any, states are restricting horse breeding operations to the extent indicated by the California report.

It takes about five years for a horse shortage to manifest itself, and in our opinion the next few years will see good sound draft horses and mules selling on very high levels.

Lamb Sells Entire Duroc Herd

Elmer Lamb, Ceres, who has been one of the staunchest Duroc supporters in this state, has recently sold his entire herd to Miller & Lux.

Duroc-Jersey Hogs
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Ranch at Owensmouth
City Office: 1219 Brockman Bldg., Los Angeles
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Gilts Bred to Cherry Volunteer 2nd for August Farrow For Sale

California Cattlemen

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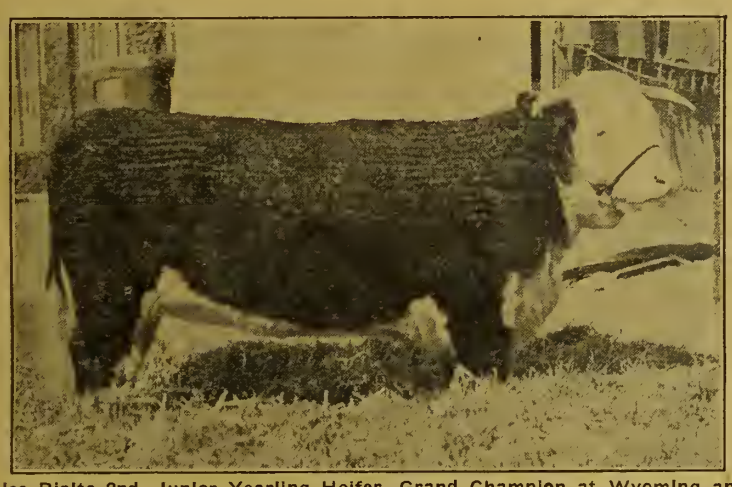

Miss Rialto 2nd, Junior Yearling Heifer, Grand Champion at Wyoming and Utah State Fairs.

These Great Bulls in Service

Wyoming Fairfax	**Gold Dust**
New Era	**Bonnie Lad 25th**
Rialto	**Beau Sturgis 4th**
Roehampton 2nd	**Bonnie Lad Jr.**

Over 900 Breeding Cows

representing the very choicest blood lines. Every female in our herd is descended from English importations and have been retained in our herd because of their size, bone, quality, hardiness and proven breeding worth.

"Wyoming Herefords" are maintained on our 25,000 acre ranch under the most progressive methods.

We Know Western Needs

and believe that our Herefords meet every demand of Western breeders and range men.

One, or a Carload

because of the size of our herd we can furnish one or a carload of bulls, and an order for one receives just as careful attention as an order for a carload.

Our Liberty Fair Exhibit

will indicate to interested parties the character of cattle maintained and a hearty invitation is extended to all California cattlemen to visit our stalls, inspect our cattle and meet our representatives.

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Cheyenne, Wyo.

Raymond S. Husted, V.P. and General Mgr., Exchange Bldg., Denver, Colo.
William Cox, Herdsman

Grand Champion Boar

Grand Champion Sow

Sacramento State Fair

Berkshires

Forty-three of our litters this year averaged ten to the litter. We sell foundation sows and boars to head your herd from our easy keeping, heavy producing strains. Write to

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DUROC JERSEYS

High Orion 221329, has a refused price of $3,500; Great Wonder 180989, Grand Champion at Iowa; Giant Invincible 208823, heads Waltmeyers Iowa herd; King Orion Cherry 80765, first Junior Yearling, Indiana and Ohio; King of Orions 240249, highest priced pig ever sold; Model Crimson Wonder 181217 a noted prize winner. Russel's Model 205512, second place at Nebraska.

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H. P. Slocum and Sons

Willows, California

Raising the Standard of California Bacon

MONTELENA HERD

Large Yorkshires

Have large litters. Service boars of exceptional quality, in best breeding condition. They are strong, active, long, deep fellows, with big bone and splendid heart girth. Come and see them, or write to

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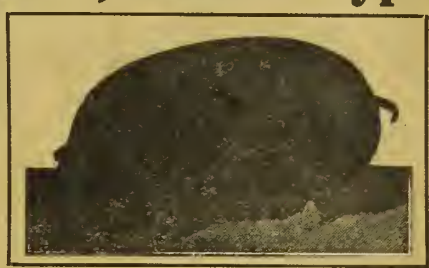
Calistoga - California

Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, $2145 cash awards. Write to



M. Bassett

Hanford, Kings County, Cal.

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As good as the best and better than the rest. A boar or a sow pig sired by my great herd boar Director, and out of one of my choice sows will add prestige to your herd. I am booking orders now for the pigs of March and April farrow. Write now and place your order.

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fed regularly to sheep will keep them free from worms. It also acts as a tonic, a laxative, a blood purifier and as an aid to digestion cannot be improved upon. Will eliminate BLOAT and ALL AILMENTS COMMON TO SHEEP.

SEND FOR A FREE SAMPLE.

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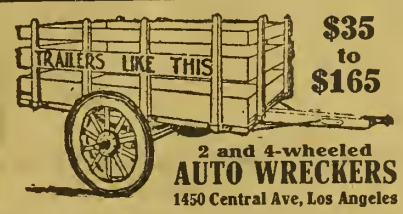
Hearst Bldg. **San Francisco, Cal.**



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Ever Held West of Chicago

Tagus Ranch, Tulare, Cal., December 10-11-12-13, 1918

90 REGISTERED HOLSTEIN COWS, HEIFERS, AND BULLS.
200 REGISTERED DUROC JERSEY SOWS, GILTS, AND BOARS.
200 GRADE ANGUS BREEDING COWS.
100 GRADE SHORTHORN BREEDING COWS.
15 REGISTERED ABERDEEN ANGUS BULLS.
3 SHORTHORN BULLS.
100 HIGH GRADE BROOD MARES, WORK HORSES, AND MULES.
14 REGISTERED PERCHERON MARES.
13 REGISTERED PERCHERON STALLIONS.
3 REGISTERED BELGIAN MARES.
3 REGISTERED BELGIAN STALLIONS.
5 15-35 H. P. SANDUSKY TRACTORS.
2 BULL TRACTORS.
$50,000 WORTH OF TOOLS AND IMPLEMENTS FOR EVERY KIND OF CROP.

This will be an absolute dispersal sale, without reserve or limit, featuring live stock offerings that are the result of ten years of careful breeding and unstinted investment. Only those who are fortunate enough to be present at this sale can appreciate the wonderful wealth of opportunity offered to secure breeding animals.

We Will Lease
in tracts of 20 acres and up, on liberal and attractive terms to SUCCESSFUL AND RESPONSIBLE PARTIES
The entire
Tagus Ranch
The richest — Most productive — Best watered and equipped 6000 ACRE RANCH in California.
Located in Tulare County, 5 miles north of the city of Tulare, on the main cement State Highway.
Apply to
Pacific States Corporation
(Owners)
At office on Ranch. P. O. Box D, Or write Tulare, Cal.

The immense quantity of implements and tools present rich bargain possibilities, for the offerings are in first class condition, all of comparatively recent purchase, in fact many items are still unpacked, in the original cases and crates as received from the manufacturers. A number of the most valuable and sought after implements in this sale are now out of stock with jobbers and not to be had new at any price.

Watch later issues of this paper for more detailed announcements of this mammoth event—and prepare to profit by it.

Catalogs in preparation. Write for one.

Owners:

Pacific States Corporation

Tagus Ranch, Box D, Tulare, Cal.
Sales Manager C. L. Hughes, Sacramento, California.
Auctioneers: Col. Ben A. Rhoades, Harold B. Rhoades.

Costs less-

than wood or concrete

Calco Hog Troughs—built of Armco rust-resisting iron and cast iron—are sanitary, strong, durable and economical. Save feed and keep hogs healthy.

Serviceable sizes include:

Size	Depth	Length	Price
10¼ inch	5 3/16 inch	40 inch	$3.75
10¼ inch	5 5/16 inch	60 inch	4.50
14 inch	7 3/16 inch	24 inch	4.55
14 inch	7 3/16 inch	60 inch	6.55

Other models up to 120 inches in length. Order by mail with check or money order—or send for price list.

California Corrugated Culvert Co.

419 Leroy St., Los Angeles. 408 Parker St., Berkeley.

Calco Hog Troughs

California Wonder

KINGS COUNTY JACK RANCH

Breeders and dealers in American Jacks and Jennets.

Jacks and Jennets for sale at all times. Come and see them.

John Burrell
R. F. D. B. Box 74
Hanford, Kings County, Cal.

When writing advertisers, mention The Cultivator.

Causes For Bitter Flavor in Milk

Written for California Cultivator By S. L. Denning

Milk sometimes contains a distinct bitter flavor which may be caused by (1) the action of bacteria, (2) feed which the cow has eaten, (3) an abnormal condition of the cow's udder, or (4) an advanced stage of the lactation period.

All milk is affected to a greater or lesser extent by the action of bacteria. The normal souring of milk is caused by a bacteria which is nearly universally found in milk. Besides the souring type of bacteria there are types which produce very disagreeable flavors and odors and among these are the bacteria which give milk a bitter flavor when they are allowed to grow and develop in sufficient numbers. They usually gain entrance to the milk with the dirt which drops into the bucket while milking or from dust in the air. Once they are in, they will multiply very fast and as their number increases the bitter flavor becomes more pronounced.

When buckets, pans and other utensils used in handling milk are washed in hot water, most of the bacteria are killed. There are a few, however, which may survive this treatment. If the utensil remains wet after washing, these bacteria which are left will immediately begin to grow and multiply so that when the utensil is again used it will contain large numbers of them. These then go directly into the milk. If they are present in sufficiently large numbers the bitter flavor may be developed in a few hours, especially if the milk is not properly cooled. After the utensils are once infected, the bacteria may be passed on in the milk from day to day providing the utensils are not sterilized.

Utensils should be thoroughly washed and sterilized after each using. The milk may first be rinsed out with a small amount of warm water and then thoroughly washed with hot water and soap or washing powder. After they have been scalded with boiling water, or sterilized in live steam, they should be completely dried by then placing on the stove or in the hot sun. If placed in the sun, care should be taken to see that they are not contaminated with dust. If thoroughly cleansed after each milking, utensils will not carry the bacteria from one day to another.

Milk absorbs readily flavors and odors from such feeds as ragweed, onion, cabbage, kale or the highly flavored feeds. These should be eliminated from the cow's ration or at least not fed until just after milking. During the later summer and fall the pastures contain a number of strong flavored weeds which will produce a bitter flavor in the milk. An abnormal condition of the cow's udder is not an uncommon cause for bitter milk. If any irregularity is noticed either in the milk when first drawn or in the udder, the milk should not be used. The advice of a competent veterinarian is always advisable in these cases.

As a cow nears the end of the lactation period the milk becomes more or less abnormal. When within six to eight weeks of the close of the period the fat content begins to rise materially, the fat globules get small and hard and the milk sometimes takes on a pungent, bitter flavor. If the bitter flavor becomes prominent, the cow should be dried up. At this time of the year bitter flavors come largely from this source. The cream during the latter part of the lactation period requires considerable churning to make it into butter as the fat globules are too hard and small to adhere readily.

Cream which is held from three to five days before churning will usually make a bitter, off-flavored butter. Good butter cannot be made from poor cream. If the utensils are well washed and sterilized after each milking and strong feeds are not fed and the cow's udder is normal, bitter flavors will usually not be noticed. Milk from cows in the latter stages of lactation may, however, be bitter even if the other sources of trouble are removed.

Believes in Good Draft Horses

Written for California Cultivator By Wayne Dinsmore, Sec'y Percheron Society of America

A good many farmers have been a bit discouraged over their inability to sell horses just when they want to. You know some men think there should always be a good cash market for anything they have to sell, at the moment they want to sell it. These are the fellows who have sacrificed their wheat at a discount rather than borrow money and wait a few months till railroads and elevators could handle their product. The world is full of such fellows, and just now some of them are knocking good horses. It is refreshing, therefore, to have such a statement as the folowing, which I recently received from Peter Wagner of West Butte, Montana, when he called at our office. Wagner is a practical ranchman who has made a comfortable fortune in the live stock game. His comments were substantially as follows:

"I believe good draft horses are the best buy a farmer or ranchman can make right now. We are short on feed, and I have no more than I absolutely need to carry through the horses and cattle I now have; but if I had the feed available or could purchase it, I would buy a thousand head of the best young draft horses I could get.

"What money I have made has been by going contrary to the road most men follow. In 1893, when no one wanted horses, I went into Southern Iowa and bought seven carloads of good grade Percheron mares. I did not buy any that weighed less than 1600 pounds, and they were good, clean, well shaped mares. I paid from $50 to $90 per head for them, and they cost me an average of $65 per head on the farms where I bought them. The same kind of mares are today bringing from $175 to $225 per head, yet farmers are now grumbling about low prices. They don't know what low prices are.

"History repeats itself. Today foreign countries are almost stripped of horses suitable for farm work. All European countries will want horses as soon as ships are available to take them over. Good, big drafters are bringing from $800 to $1000 apiece in Great Britain, and in France $600 is the lowest price for even a common sized chunk. The American consul's report from Stockholm, Sweden, in August, states that the German military commission had recently bought 250 horses at 3400 crowns each, Swedish money, which means that they paid $1740.21 per head for them.

"The United States is the only nation with any surplus of big horses. I know Russia does not have them, for I lived there for twenty-one years and know Russia as only a native of that country can.

"Some men fear the influence of the tractor on the horse market. As a practical farmer, with long years of experience in the West, I know that they will not displace the horse. Don't fret about them. While my chief interests have been in cattle, I have sold $27,000 worth of horses off the range since 1911, have twice as many horses left as I ever had, and my horses have made be more clear profit, proportionately to numbers, than my cattle.

"My advice to my friends to to get rid of their inferior horses, and to put in all the good ones they can handle now. Don't sacrifice a single good drafter, and go in debt, if necessary, to put your teams on a first class basis now while horses are relatively cheap.

"The time to buy is when the average man is discouraged and wants to sell. You can never go wrong on that plan."

I give you the comments of this practical old Russian ranchman, who has achieved success in the West and whose son will soon be on the fighting line in France, as he gave them to me.

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Livestock Queries

Angora Goats

Is it profitable to raise goats in California? What breed is best? How many pounds of hair per head could be expected? What price does it command? What is the value of goats as meat producers? Do kids need great care when very young?—Subscriber, Bakersfield.

It is quite profitable to raise Angora goats in the rough, rocky sections of this state where sheep will not thrive. Furthermore, goats are kept in some of the valleys to good advantage, there being about 100,000 head in this state.

There is but one strain of Angora goats, and the majority of goats in the state are grades which are being improved by crossing the native goats with pure bred Angora bucks. The average clip throughout the state is approximately three pounds per goat, although, by good feeding, it is possible to produce four and five pounds per goat.

The price of mohair varies from 65 cents to 75 cents per pound at present. While the market somewhat discriminates against goat meat, young goats furnish excellent meat and fat does are selling for $5.00 and $6.00 per head.

Young kids are more difficult to raise than lambs, as they require special attention. For further information apply to the Department of Agriculture, Washington, D. C., for Bulletin 573, "The Angora Goat."—Prof. R. F. Miller, University of California.

Wool Questions

Please inform me through the Cultivator as to how I can find out whether my wool which I have shipped to the government is graded by the government or by a wool buyer. I have shipped my wool through a buyer who says he is an agent of the government. I shipped to Stockton. Is the wool in government hands since it arrived in Stockton? Is it insured? Who pays the insurance? Do I receive any interest on my money invested in the wool while it is in the hands of the government?—Subscriber, Fruto.

I would advise the inquirer that the wool shipped by him to Stockton is not in government hands until it reaches the Atlantic seaboard. The government pays 6 per cent interest on all wool shipped to Boston from the time of arrival, as shown by the railroad receipt. All wool dealers carry insurance on their stocks of wool, and no doubt the party's wool is safely insured, but he will not receive interest on his wool until it arrives at Boston.

There has lately been appointed an appraising committee b the government, at San Francisco, and this committee is in position to appraise wool upon request, and they are usually called upon when the buyer and the grower cannot agree on the price.—R. F. Miller, Secretary, California Wool Growers' Association.

Bitter Milk

For the past three or four weeks the milk from our Jersey cow has been developing a strong, bitter taste after standing a few hours. It is almost impossible to churn the cream.

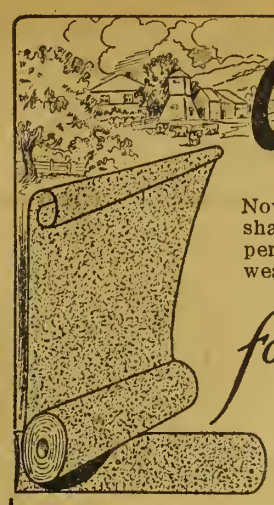
About a month ago we ran short of alfalfa hay and for a couple of weeks fed first class red oat hay. For past two weeks we have been feeding fresh alfalfa hay, but do not notice any improvement in the milk. What is the remedy?—Subscriber, Lindsay.

Answer: We have recently received so many letters outlining similar conditions that we have asked S. L. Denning of the University of California to prepare an article on the causes of bitter milk and you are referred to his article appearing in this issue.—R. P. R.

UNITED STATES FOOD ADMINISTRATION VIEWS

Hon. Herbert Hoover in recently discussing the live stock situation, expressed himself in part as follows:

"It must be the desire of every American to see our herds maintained and improved, for not only have we an enormous burden to carry in furnishing food during the war, but after peace has come this burden will be even greater if the world is to recover from the enormous destruction of animals without even greater human hardship than at present."



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He is by Prince Gelsche Walker and out of Hiske of Riverside, being therefore full brother to Lady Hiske Walker, 34.25 pounds butter in seven days as a junior four year old, former state record in class.
His offspring are uniformly straight, vigorous, and well marked. A few of his young sons for sale.

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Wanted—Small ranch for general farming, not over $5000. Good soil, no alkali, water and house. Box 16, Care Cultivator.

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Registered Durocs of the big type—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, California.

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To Lease—Large dairy barn and fully equipped for first class dairy near Cucamonga or would consider partner in business for 40 cows. Box 34, El Monte, California. Phone 31W, El Monte.

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Guernseys—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., California.

SHORTHORN CATTLE, SHROPSHIRE SHEEP. Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., California. W. P. Dwyer and W. S. Guilford, Owners.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, California.

Registered Shorthorns (beef) calves and yearlings for sale. Both sexes, reds and roans. Choice goods breeding. Fair Oaks Ranch, Willits, California.

Ayrshires (registered) — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

Jersey Bulls and bull calves. Good individuals from producers. Write or come and select. N. H. Locke Co., Lockeford, California.

Elkhorn Farm Ayrshires—For sale young bulls of exceptional breeding and individuality. J. Henry Meyer, R. D. 2, Box 82, Watsonville, California.

For Sale — Polled Herefords; cows with sucking calves and with calf; and yearling bulls. Gay Owen, Calipatria, Imperial County, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Sunshine Farm Jerseys — Young bull, ready for light service, for sale. E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

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Registered Guernseys for sale. P. J. Weisel, Santa Fe Springs, California.

POULTRY

Fall Chicks For Sale—400,000 S. C. White Leghorn chicks from free range Hoganized stock only, for delivery from July to December, at very reasonable prices. Fall chicks are most profitable—broilers in ten weeks, pullets lay at five months. We guarantee safe delivery of all chicks to destination. Shipped safely anywhere West of the Rockies. No money in advance, pay on delivery. Special prices on 500 and 1000 lots. Finest hatchery in the world. Established over twenty years. Further information write Must Hatch Incubator Company, 424 Seventh Street, Petaluma, California.

Eggs, Meat Going Higher! Great Shortage. Big profit for years sure on really heavy laying strains. Our 200-290 egg Leghorns, Anconas, Reds, Rocks, Minorcas, Wyandottes, Orningtons, ducks, turkeys more profitable now than ever, clearing $5 yearly. Some best government trapnested hens, 280-283 eggs. Hundreds breeders; laying, younger pullets; thousands chicks weekly; reasonable. Few open dates winter, spring delivery. Last year's prices. James Beeson, Pasadena, California.

White Leghorn Baby Chix from heavy laying (Hoganized) stock; $15.00 per 100. We guarantee safe arrival. The Pioneer Hatchery, 409 Sixth St., Petaluma, California.

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Wanted—1000 POULTRYMEN to try the New Perfection Automatic Poultry Fountain. None better. Free circular. John Imschweiler, Inglewood, California.

Buff Orpingtons — Five extra fine Buff Orpington Cockereis; aiso a few pullets. No culls—do not have them. J. J. Dean, Moneta, California.

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Black Orpingtons Lay, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, Cal.

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Bronze Turkeys—Mammoth Bronze Toms and hens for sale. Place orders now before prices advance. Also Collie dogs for herding. John G. Mee, St. Helena.

For Sale—Mammoth Bronze Turkeys, the Best in the West. Geo. A. Smith & Son, Corcoran, California.

GOATS

Largest Herd Swiss Toggenberg on the Coast. 100 grade does bred to my $1000 Buck, Captain No. 256, A. M. G. R. Association, due to kid in February and March, $40.00 each, lots to suit. Crating $2.00 extra. Stamp. Rae P. Williams, Oakland, California.

FERTILIZERS

Lime—Slaked. Corrects heavy sour soils quickly. H. B. Matthews, 495 Douglas St., Pasadena.

ENGINES

Several New and Slightly Used Engines. ARNOTT & CO., Implements, 112 E. Los Angeles St., Los Angeles.

Fire guards of one or more furrows should be plowed around all fields of shocked or stacked grain to prevent conflagrations starting from the sparks of locomotives, tractors, thrashing engines or from the careless use of matches, pipes or cigarettes.

Live Stock Field Notes

Splendid Backing for First Tulare Sale, November 20-21

The catalog of the First Tulare Sale of registered Holsteins is an object lesson in community effort. A study of the reference sires in the catalog reveals several interesting facts: First that Tulare County is the only county in California that can boast of three Holstein sires in active service each out of a dam that made above 35 pounds butter in seven days. The three are Higdon's King Korndyke Pontiac 20th, out of the 36.81 pound state record junior three year old, Miss Valley Mead De Kol Walker; Guerin's King Sadie Vale Idyl Segis, out of K. P. Idyl Segis, the state record junior four year old, 35.57 pounds butter in seven days; and Sturgeon's Segis Pontiac Abbekerk, out of Changeling Tidy Abbekerk Gem, 35.07 pounds butter in seven days, and she is the only 35 pound cow in California that made over 34 pounds at the previous freshening. The yearly record backing is represented in Tulare County in this sale by two reference sires out of dams that made over 1100 pounds butter, one out of a dam that made 1077 pounds, another out of a dam that made 808 pounds, another out of a dam that made 711 pounds, another out of a dam that made 767 pounds. The mere figures fall far short of telling the story, for the breeding represented in these bulls is in the very front rank of the Holstein breed today.

Sir Aaggie De Kol Acme 2nd, another of the royally bred Holstein bulls now in service in Tulare County deserves an item all by himself. His dam made over 1100 pounds butter in one year, and five of his seven nearest dams average over 1100 pounds butter in one year, an average equalled by only one other Holstein service bull in the world. Mr. Whaley was exceedingly fortunate in getting this bull as immediately after he bought him one of the biggest Eastern breeders tried to buy him. The same breeder bought another young at public sale not long after for $10,000, and he fell considerably short of having the yearly record or seven day backing of Sir Aaggie De Kol Acme 2nd.

Tagus Ranch Sale

In many respects the four-day sale of live stock and equipment to be held by the Pacific States Corporation at their Tagus Ranch, Tulare, will prove one of the greatest public sales ever held in California.

This ranch has long been regarded as an exceptional tract of land and a recent decision to subdivide and offer it for sale furnishes the motive for the sale scheduled for December 10, 11, 12 and 13.

The offering will consist of 90 head of registered Holstein cattle; 200 grade Angus cows; 15 registered Angus bulls; 100 grade Shorthorn cows; three registered Shorthorn bulls of serviceable age; 24 registered Percheron and Belgian mares; 15 registered Percheron and Belgian stallions, several of the Percheron stallions are sired by Fernand, 72763 (65262) now owned by the University of California; 100 high grade brood mares, work horses and mules; seven tractors and an immense amount of implements of all kinds.

A sale as extensive and varied as this event promises to be will doubtless contain a great many bargains that can be turned to the advantage of a keen buyer.

The event will be under the management of C. L. Hughes, Sacramento, and will be cried by Col. Ben A. Rhoades and Harold B. Rhoades.

Higdon's Holsteins are Producers

Tulare Holstein Farm, owned by W. J. Higdon, Tulare, is starting the test season with some promising records. Troutbrook Pontiac Starin, a granddaughter of King of the Pontiacs, has 25.48 pounds butter in her first seven days on test, while Ellen Hartog De Kol has made 22.45 pounds butter in seven days. The latter cow and her daughter are both in the Tulare sale. Two very creditable eight months after calving records are being made by cows now on yearly test. Hertinga Willis has 17.78 pound butter in seven days to her credit 250 days after calving, and the junior three year old, Coloma Beauty Butter Maid has 16.20 pounds to her credit. Both of these are making big yearly records. Harry L. Redd, herdsman, has a full season of work cut out for him with the splendid cows and heifers to freshen in this herd between now and spring. The herd enjoys a steady demand of bulls to go into dairy and breeding herds and is kept sold down close.

Kiesel Holsteins Producing Well

Jane Garden Farm, owned by Fred W. Kiesel, Sacramento, will have a choice lot of registered Holstein cows and heifers to go on test this winter. One of the young cows, Beauty Mercedes Nudine, recently made 23.89 pounds butter in seven days and 98.13 pounds in 30 days. Two daughters of King Korndyke Pontiac have recently made very good records, one of them, King Korndyke Pontiac Charlotte, making 22.92 pounds butter in seven days as a junior three, and another, Natoma Superba Pontiac making 19.25 pounds butter in seven days as a junior two year old. The daughters of King Korndyke Pontiac are showing up especially well and several of them may be expected to do something big.

Harlan Heifer Going Strong

Nadgy Korndyke Mooie 3d, a junior two year old daughter of King Mead of Riverside, owned by J. H. Harlan Company, Woodland, had 10,426.7 pounds milk and 549.18 pounds butter to her credit at the end of 189 days on semi-official test, with an average test of 4.22 per cent for the period. She promises to round out the year with a most satisfactory record.

PURE BRED REGIST'D HOLSTEINS

Tuberculin Tested State Superfficial Production Butter Fat Everything Guaranteed Individuality Breeding

King Korndyke Pontiac

(shown above)

by every right of inheritance should transmit great production and high class type. His sons and daughters have already proven his ability to transmit type of the first rank—daughters with the big, deep bodies and the ample, fine textured udders that go with large dairy production. As for his sons, one of them sold for $6500.00 at public sale, going to head W. J. Higdon's fine herd at Tulare.

Two daughters of King Korndyke Pontiac recently freshened in our herd and made very satisfactory records. King Korndyke Pontiac Charlotte, under official test made 22.92 pounds butter in seven days as a junior three year old. Natoma Superba Pontiac, freshening at two years four months, made 19.25 pounds butter in seven days. We have several other of King's daughters to freshen this winter and they look especially promising.

You need one of his young sons in your herd. Come and see what we have on hand or write for pedigrees and prices. We make liberal terms if desired.

Prince Gelsche Walker Kornkyke

(shown below)

JANE GARDEN FARM

SACRAMENTO — CALIF.

FRED W. KIESEL PROP'R. C. W. YOUNG SUP'T.

"He Has Developed Wonderfully"

Is the universal statement of all who saw our great junior herd sire

King Korndyke Pontiac 20th

when we bought him as a calf, and who again saw him out on the show circuit this year, where at California State Fair he was defeated in class only by the twice grand champion bull.

The way he is deepening and lengthening out, and the splendid vigor which he possesses, are most pleasing to us, as he is doing even a little bit better than we expected of him.

And his first calves that are now coming are certainly beauties. It is not too early to begin to figure with us on one of his young sons for your herd. Come and see them or write for description and price of one.

NOTE: We are selling some choice, highly bred cows and heifers bred to King Korndyke Pontiac 20th in the Tulare Sale, November 20-21.

Our Entire Herd is Tuberculin Tested

Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

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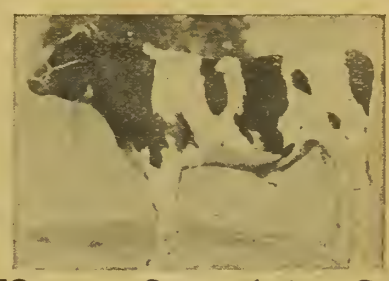

Merci Lad Korndyke Burke

Son of De Kol Hengerveld Burke who has a long list of A. R. O. daughters with records up to over 35 pounds butter in seven days, and out of Winnie Korndyke Cornucopia De Kol who made 31,031.1 pounds milk in one year and was the first cow in California to make over 1200 pounds butter in one year. A few of his good sons out of excellent dams for sale.

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Household Department

THOSE GOOD OLD DAYS

Gone are the days when my steak was young and rare,
Gone are the pork chops from my bill o' fare;
Hoover has said we must economize.
I hear my Uncle Sammy calling
Hooverize!

CHORUS

I'm willing, I'm willing,
Let's all economize.
I hear my Uncle Sammy calling
Hooverize!

Why should I grieve for my fast departing cash?
Why should I weep when my wife brings in the hash?
What though my cakes are the very smallest size?
I hear my Uncle Sammy calling
Hooverize!

Why should I mourn when my bread is made of rye?
Why should I sigh for the good old custard pie?
We'll do our bit until the kaiser dies.
I hear my Uncle Sammy calling
Hooverize!

—Author Unknown.

A QUESTION OF SPEED

By James William Jackson in Youth's Companion

"PILE this lot of planks fast, Tom! Mr. Gardham will be around pretty quick; and I'm afraid he has the idea that you're slow."

Tom Harcourt, who was rolling up his sleeves, flushed at the yardmaster's remark. A questioning look on his face led the yardmaster to tell him a little more. Mr. Gardham, the owner of the lumberyard where Tom worked, had asked why he was half an hour late the day before in delivering a load of lumber at Thompson's new house.

"I was blocked by a long freight at the crossing," Tom explained. "The locomotive stalled for fifteen minutes and—"

"The gates were up and the way clear when Mr. Gardham drove by," the yardmaster interrupted a little sharply. "Why did you go off and leave your team standing idle in the street instead of moving along? You knew it was a hurry order."

The busy yardmaster moved off without waiting for an answer. Tom drew a deep breath. It was discouraging to have the head of the firm question his efficiency, especially at that moment, for a well built young teamster with first class qualifications had only yesterday applied for a wagon. Tom feared that he was to be pushed down another peg in the industrial scale. He had been a clerk with good prospects in the office of the Valley Foundry Company until the company had gone out of business. Work had been scarce then and he had been glad to get a job driving a wagon.

Positions were still scarcer now; and with a thought of the people at home who were dependent upon him the young fellow worried over the apparent disfavor into which he had fallen. With all his heart he wished that circumstances had not played him such a trick the day before.

He had left the yard with a full half hour's time in which to make only a twenty-minute trip. Outside the gates he had turned up the grade that led round a street corner and thence to the railway crossing. He had had Bess, the most valuable horse in the yard, on the off side; and she had just recovered from a leg sprain. With all the solicitude of a fond master, Tom had taken special care of her and had watched for any signs of a relapse.

Near the corner he had suddenly spied in the road a heap of wood, evidently dropped from a house wrecker's wagon. There was one piece from which big nails protruded, and a jagged piece of tin on a fragment of roofing timber made it even more dangerous. A carelessly driven horse or an automobile would have been sure to come to grief on that piece of wood unless some one had removed the obstruction.

Tom had driven to the top of the grade and, rounding the corner, had stopped his horses on level ground. There he had left his team, and running back had picked up the debris and dumped it into a convenient open lot.

When he had reached the railway track a few minutes later the gates were just going down. Then the passing freight locomotive had stalled and Tom had decided that luck was against him; but he had not known until now that the senior member of the firm had passed in his carriage and had seen the abandoned team standing idle.

"And excuses, I suppose, will sound weak!" Tom muttered to himself now, as he hurriedly piled the lumber. "I'll just have to sail in and make a new reputation for fast work."

There was much activity in the busy lumberyard. Wagoners threaded the stacks of timber making up loads, a shifting engine was taking out and putting in cars on the sidings, a big creaking crane was unloading coal from a canal boat and sending it rattling down the chutes.

Caston, a yard worker, joined Tom on the pile. A few minutes later Mr. Gardham came down the yard with the superintendent. The senior member was accompanied by his small son, Benny.

While Mr. Gardham and the superintendent went some distance along the siding, the youngster stopped to watch Tom and his mate pile the planks. Later the boy walked over to the sand pit next to the lumber pile, and started to play in it.

The conference of Mr. Gardham and the superintendent beside the tracks led to some decision that made them need a messenger. Tom, trying to hurry his work along, happened to look that way, and saw the superintendent beckoning to him.

As Tom approached, the superintendent and the senior member were discussing the lumber piles. One pile in particular had met with Mr. Gardham's disapproval. It stood on the farther side of the sand pit and was made up of especially long planks. Only because the yard was so badly congested had lumber been piled there at all, for the driveway swept inward at that point, and so the stack had crowded perilously close to the railway siding.

"See that!" Mr. Gardham cried, with a frown.

The yard engine at the moment passed out along the siding, and the car that it was hauling was almost scratched by the projecting timbers.

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PATTERN DEPARTMENT
CALIFORNIA CULTIVATOR
Los Angeles.

However, it was not a high pile, and a large part of it was to go out of the yard immediately. The superintendent promised to give the matter his attention; then the two proceeded to discuss the general lack of room in the yard. Tom stood respectfully by until they should be ready to use him. Meanwhile he watched the engine. It disposed of the car it had taken out; then it backed up to a loaded car and, with loudly screeching wheels, began to push it to the switch.

Mr. Gardham remarked that it was time for him to take his son downtown to meet Mrs. Gardham. At the mention of Benny, Tom glanced toward the sand pit and discovered that the boy had left the fort he had been building in the sand and was gingerly climbing up the face of the lumber pile that his father and the superintendent had been discussing a moment before.

The incoming car of timber had by that time cleared the switch and was already heading down the side track toward the group. Tom caught his breath sharply.

"Look!" he cried, as he suddenly leaped away in the direction of young Benny.

The car was stacked high with new lumber, and its heavy cargo had made the retaining posts bulge out. Tom had seen at a glance that Benny Gardham would be crushed against the lumber pile.

Oblivious of the fact that the car was bearing swiftly down on him, the boy continued his interesting climb. The shrieking of wheels as they crunched over the switch points drowned Tom's warning shout. And there was no one near to pull him down. The engine men were not aware of the situation; and Caston, the yard worker, had gone into the driveway to help chain a big girder on one of the wagons.

Tom was nearer than anyone else to the child, but even he was two hundred yards away. He bounded along the track toward the lumber pile, and Mr. Gardham, calling in terror to his son, hurried after him as fast as he could.

"Come down, Benny, quick!" Tom shouted as he drew near the pile. "Come!"

The boy turned a questioning face toward Tom and then started to obey. But to Tom's dismay, he saw that the youngster's foot had wedged tightly between two planks!

Setting his teeth and clenching his fists, Tom increased his speed. He had left Benny's father and the superintendent far in the rear. The loaded car was shooting down the track now only a hundred feet away. Tom could see that its load would barely scrape by the lumber pile. Meanwhile Benny, with his fat little body humped out from the stack, was trying valiantly to free his foot.

The engineer of the locomotive was on the wrong side of the cab to see the boy's predicament. Tom realized that everything depended upon himself.

When he reached the pile, the loaded car had cut the hundred feet of distance in two. Breathless, but with undiminished speed, he went up the "steps" of the stack like a cat, and reached the captive boy.

Holding to the stack with one hand, Tom worked fast with the other. The planks seemed to grip the little foot like a vise. Beads of perspiration came out on Tom's face as the shadow of the oncoming, screeching timber car seemed about to fall upon him.

Once, twice, three times he tugged at the boy's shoe, although he was in momentary terror lest he pull the child down on the track in front of the train. The car was within twenty feet of them now; the engineer had at last seen the danger, but Tom knew that the train could not stop in time.

The bulking load seemed fairly to rush at the lumber pile; but at last Tom freed Benny's foot. "Climb!" he shouted; and he himself leaped a step higher. There was not time to go down, and the top of the pile was only a yard or so farther up. With a lightning snatch Tom grasped the back of the child's blouse and lifted the little fellow. For an instant the child's feet trod on empty space.

The car had already reached the far side of the lumber pile, and its brakes were snapping fire as they ground on the wheels. A protruding plank, two inches thick, snapped like a match stem. With a sudden burst of strength Tom lifted the boy and threw him up to the top of the stack.

The car was almost upon him. Tom instinctively shot out a hand to ward it off. That hand actually touched the car; at the same time his other hand let go its hold, and he went tumbling backward. As he landed in the sand pit a dozen feet below, the onrushing mass tore a plank out of the side of the pile and hurled it vengefully after him. It struck him a heavy, glancing blow on the knee, which caused a sharp pain.

A moment later, when he slowly picked himself up and emerged limping from his sand bath, he had the satisfaction of seeing the frightened Benny safe on top of the quivering pile.

Caston carried the child down. At the foot of the stack Mr. Gardham gathered his son into his trembling arms. The senior member then wrung Tom's hand and told him to come into the office to patch up his wounded knee.

"By the way," Mr. Gardham said on the way to the office. "Thompson—you know, the owner of the house—saw and told me what it was that delayed you with his load yesterday. As a lover of horses he forgives you; so do I."

That seemed to make Tom's knee less painful. Mr. Gardham probably did not realize that, for he took an emergency roll of bandage linen from the drawer of a desk near his own and set to work deftly to wrap Tom's black and blue knee. Meanwhile he talked with apparent irrelevance about the semi-confidential clerk who had last presided at that desk.

"He was a rapid worker," Mr. Gardham admitted; "but he was sometimes rapid when he ought to have been slow and careful. The man before him never made a mistake; but he could not rise to speed even in an emergency—like that you faced a few minutes ago, for example."

Tom blushed a little, and Mr. Gardham, tearing the end of the bandage into two strings, tied them neatly. Then he smiled at Tom.

"I've heard that you've had experience as a clerk," he said. "Perhaps you would like to give up your wagon to Brannigan and help out at this desk with my personal work? If you would, I feel sure you will combine the desired degree of carefulness and speed."

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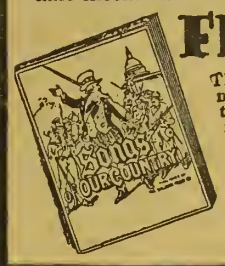

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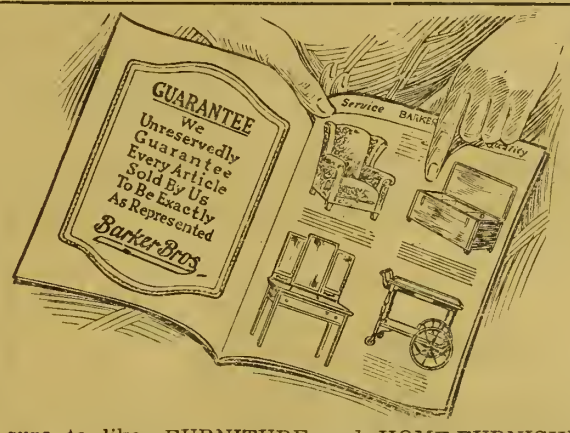

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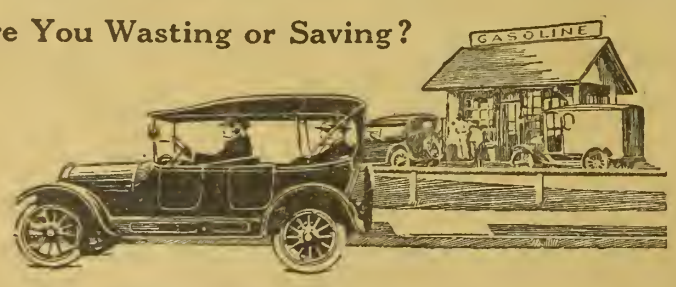

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California Cultivator
Costs $1 per Year

Los Angeles Market

Los Angeles, Nov. 13, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.

Cal. Extra Creamery 50

Nov.	6	7	8	9	11	12
'18 ...	57	57	57	57	..	57

CHEESE

Brokers' prices:
California fresh, lb. 31

EGGS

Exchange quotations. Price to retailers 2 to 3 cents higher.

Fresh extras 77
Case Count 70
Pullets 66

Dairy Exchange prices past week on fresh extras:

Nov.	6	7	8	9	11	12
'18 ...	78	78	78	78	....	77

POULTRY

We quote to producers.

Broilers .....37@41
Fryers 33
Hens, small, 27@28; heavy 31
Colored 32
Ducks, lb., 22; ducklings .....23@24
Roasters 30
Roosters, old 20
Turkeys .....31@34
Geese 20
Belgian Hares 18
Squabs .....30@35

LIVESTOCK

Prospects for a better hog market in this city were never better than at the present time. Some of the local killers who formerly slaughtered only sufficient hogs to supply their ordinary requirements are now increasing their capacity as they have found that an available supply to keep their gangs working constantly can be obtained through the recently organized Farm Bureau Market Association that conduct sales in the various counties of the lower San Joaquin Valley almost daily.

Prices obtained for the hogs sold through this association average from 50 cents to $1.00 per cwt. higher than those sold by individual raisers.

Greater inducements for the cattle feeder to increase his stock of feeders have been brought about by the recent government export orders now being filled in this city. The requirements of the government for export beef are high and this city will get its share of this business if the cattle men of Southern California produce three-quarters finished steers of a quality meeting with export standard. Prices being paid for this class of live cattle fully justifies feeders to enlarge their feeding operations.

The demand for good lambs continues strong and active and yearlings are also meeting with good offers. The market is very slow and the quality of ewes now coming in is such that buyers are not anxious to take them.

Report of live stock conditions on the Los Angeles market as compiled by the United States Department of Agriculture, Bureau of Markets, through the local office:

Good Steers .....11.50@12.00
Medium Steers .....10.00@11.00
Common .....9.00@10.00
Good Cows .....8.00@8.50
Medium Cows .....7.00@7.50
Common and canners .....5.50@6.00

Hogs—
Prices quoted below are for carload shipments. Driven-in, or truck hogs sell for ½ cent less:

No. 1 hogs, 150-200 lbs.....16.50@17.00
No. 2 hogs, 250-350 lbs. .....15.00@16.00

Sheep—
Lambs, 65-80 lbs. .....15.00@15.50
Wethers .....11.00@11.50
Ewes .....7.50@8.00

POTATOES

Wholesale selling prices:

Burbanks .....1.90@2.40
Sweet, lug .....65@75
Idaho Russett .....2.00@2.25

ONIONS

Wholesale selling price, cwt.

Australian Brown, lug .....1.75@2.00
White Globe, cwt. .....3.50@3.75

VEGETABLES

Wholesale prices:

Beans—String .....5½@6
Limas, lb. .....5@6
Cabbage, cr. .....2.25@2.75
Carrots, doz. .....40@45
Cauliflower, cabbage cr. .....2.00@2.50
Celery, cr. .....2.50@4.00
Corn, lug. .....50@90
Cucumbers, lug .....90@1.00
Egg Plant, lb. .....3½@4
Horseradish, lb. 15
Lettuce, cr. .....75@85
Peppers, Chili, lb., 5; Bell, lug.....55
Pumpkins, lb. .....1¼@2½
Rhubarb, bx. .....65@70
Squash—Hubbard, lb. .....1½@2½
Summer, lug 75
Tomatoes, lug .....1.00@1.75
Turnips, doz. 40

FRUITS

Apples—Bellefleurs, bx. .....1.60@1.85
Yucaipa Delicious 2.75
Jonathans, lb. .....5½@6
Pearmains 1.75
Newtons .....1.40@1.65
Cranberries, one-third bbl. .....3.75@3.85
Figs, lb. .....3@5
Grapes — Homegrowns, Muscats, 6@7; Tokays, 7; Cornichons, 6@7; Malagas, 7@9; Emperors, 6@7.
Pears—Bartletts, lb., 5@8; Comice, lb., 7; Winter Nellis, lb., 6; Bosc, lb., 7; Beurre, 6; Flemish Beauties, lb., 6@7.
Peaches—Salways, lug, 1.75@2.00; Orange Cling, 1.75.
Persimmons, lb. .....6@8
Quinces, lug. .....80@1.10

CITRUS

Oranges—Navels, ...6.00@7.50
Grapefruit, Seedless, bx. .....4.00@5.00
Lemons, fy. pk. bx. .....7.00@8.00

HONEY

Jobbers' prices:
White extracted .....20@22
Light amber extracted .....18@20
Amber extracted 16
Fancy white comb, per case.....6.50
Comb Lt., amber, per case .....5.00@6.00
Beeswax, lb. .....32@34

BEANS

Price to retailers (F. E. Harris Co.), cwt.:

Lady Washington 11.00
Navy 11.00
Pinks 8.25
Tepary 7.00
Red Mex. 8.75
Lima 12.50
Blackeyes 7.00
Garbanzos 10.75
Soy 7.75
Lentils 22.00
Kidney 11.75
Henderson Bush Lima 10.50

HAY

Quotations by Nichols - Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

No. 1 Tame Oat .....26.00@28.00
No. 2 Tame Oat .....23.00@25.00
No. 1 Barley .....22.00@24.00
No. 2 Barley .....19.00@21.00
No. 1 Alfalfa .....20.000@22.00
No. 2 Alfalfa .....17.00@19.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS

See San Francisco market.

San Francisco Markets

San Francisco, Nov. 12, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapped, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:

Extras 59

Nov.	5	6	7	8	9	11
'17	59	59	59	59	..	
'18	43	42½	42	42½	..	

Rcts. wk. ending Nov. 11, 172,500 lbs.

CHEESE

Dairy Exchange quotations:

Cal. Flats .....32@34
Ore. Triplets 36
Jack Cheese, full cream .....Nominal

EGGS

Dairy Exchange quotations:

Extras 85½
Selected Pullets 71

Nov.	5	6	7	8	9	11
'17	88	88½	89	86½	85½	
'18	58	58½	59	59½	..	

Rcts. wk. ending Nov. 11, 5185 cases.

POULTRY

We quote to producers, lb.:

Per lb.: Large hens, 40@42; small hens, 35@38; broilers and fryers, ¾ to 1½ lbs., 45@50; 1½ to 2 lbs., 40@41; 2 lbs and over, 37@40; old roosters, 23@24; young roosters, 35@38.
Belgian hares, live, 19@21.
Jack Rabbits, doz., 3.00@3.50.
Turkeys, dr., 37@40; live, 28@30.
Turkeys, dr., 36@44; live, 28@30.

LIVESTOCK

Prices gross weight:

Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.

Steers, lb., 10½@12½; thin, 8@9; cows and heifers, 7@8¼; thin, 5@6; calves, 8@11.

Sheep — Lb. gross weight: Wethers, 11½@12; ewes, 9@9¼; lambs, yearlings, 12@12½; milk, 14@14½.

Hogs—Hard grain fed, weighing 100 to 140 lbs., 16; 140 to 250 lbs., 16½; 250 to 325 lbs., 15½.

POTATOES

Wholesale selling prices at wharf, cwt.:

Salinas .....3.25@4.00
River, cwt. .....2.00@2.25
Sweets, lb. 3

ONIONS

Wholesale selling price on wharf, cwt.:

Australian, Brown and Yellow..1.00@1.25
Garlic, new, lb. 25

VEGETABLES

Wholesale selling price:

Artichokes, doz. .....30@80
Beans, String, lb. 5@6; Limas .....5@7
Beets, lug .....75@1.00
Brussels Sprouts, lb. .....6@7
Cabbage, lb. .....1¼@1½
Carrots, sk. .....75@1.00
Celery, doz. .....50@60
Cucumbers, lug. .....1.50@1.75
Pickling, lb. .....2½@5
Egg Plant, bx. .....75@1.10
Lettuce, cr. .....1.50@2.00
Mushrooms, lb. .....18@20
Onions, green, bx. .....65@75
Peas, lb. .....12@15
Peppers, Bell, lug, 75; Chili 75
Pumpkins, sk. .....75@1.00
Rhubarb, bx. .....1.50@1.75
Squash—Summer, lug .....1.00@1.75
Marrowfat, sk. 1.00
Cream, 75@1.00; Hubbard, sk.1.00@1.25
Tomatoes, lug .....75@1.25
Turnips, sk. .....75@1.00

FRESH FRUITS

Apples—Jonathan .....1.50@2.00
Bellefleur .....1.35@1.65
Newton Pippins .....1.50@1.75
Spitzenberg .....1.75@2.25
Bananas, lb. .....6½@7
Berries—Ch.: Strawberries, 9.00@12.00; raspberries, 9.00@10.00; blackberries, 10.00@12.00; huckleberries, lb., 20@22; Cranberries, bx., 3.50.
Figs, bx. .....75@1.15
Grapes — Tokays and Malagas, 1.25@1.75; Muscats, 2.00@2.50.
Pears, Bartlett, wrapped bx.,...2.50@3.00
Beurre Hardy, lug 1.50
Kieffer, bx. .....2.25@2.50
Russets .....1.00@1.25
Persimmons, bx. .....1.00@1.25
Pomegranates, ½ orange bx.....1.25@1.50
Pineapples, doz. .....3.00@4.50
Quinces, bx. .....90@1.15

CITRUS

Lemons, bx. fy., 7.00; lemonettes, 4.50@6.00; oranges, 10.00@12.00; grapefruit, 2.50@5.00; limes, half bx., 2.50@@3.00.

NUTS

The Almond Growers' Association has established opening prices as follows per pound:

Nonp. 27½
I.X.L. 25½
Ne Plus 24½
Drake 20

Outside dealers have named prices above these quotations and it is understood association stock is practically closed out and prices withdrawn.

Walnuts: Net prices have been named by the California Walnut Growers Association:

No. 1 Softshell 28
No. 2 Softshell 25
Jumbo 30
Fancy Budded 31½
Golden Gate Budded 29

Franquettes, Eurekas and other fancy varieties sold on sample. No. 1 Softshell guaranteed 88 per cent good; Fancy Budded, 90 per cent. In case of worms or damage by ants not more than five per cent.

RICE

Prices which rice millers of this state have voluntarily agreed with the food administration for California to pay to growers for paddy rice are as follows:

No. 1 and No. 2 Japan, in sacks, $4.32 per 100 pounds.

No. 3 and No. 4 Japan, in sacks, $4.16 per 100 pounds.

Prices for other grades will be paid for on a basic value proportionate, and no higher prices than those quoted above for any grades whatever will be paid.

The millers agree further to sell cleaned rice and by-products for prices not to exceed the following:

Fancy Japan, 1½c per pound.
Choice Japan, 7⅜c per pound.
Fancy second heads, 6⅞c per pound.
Screenings, 5⅝c per pound.
Brewers', 5¼c per pound.
Rice polish, $50 per ton, carlots.
Rice bran, $36 per ton, carlots.

BEANS

Jobbers' prices, cwt., recleaned:

Limas .....11.75@12.00
Small Whites 10.00
Large Whites 9.00
Blackeyes 6.40
Pinks 6.90

HONEY

Jobbers' prices:

White extracted .....20@22
Light amber extracted .....17@20
Amber extracted 16
White comb, cs. .....4.50@6.00
Light amber comb, cs. .....3.50@4.00
Beeswax .....32@34

GRAIN

Wheat—Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per. Bushel	Per Cental
No. 1	$2.20	$3.62 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	$2.18	$3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	$2.16	$3.60
No. 2	2.13	3.55
No. 3	2.09	3.48 1-3

For sacked grain add 9 cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.

Barley—Feed, 2.10@2.17½ per cental for choice spot; shipping, 2.20@2.25; milling, 2.25@2.30.

Oats—Red feed, 2.55@2.70 per cental; seed, do, 2.95@3.05, with recleaned at 3.15 @3.30; black, 2.55@2.65 for feed and 3.00 @3.15 for seed.

HAY

Under date of November 9, Scott, Magner & Miller says:

Receipts past week 815 tons. The large amount of damaged hay which has been forced into this market has hurt sales materially as it is disposed of on the market for whatever it will bring, consignees refusing to warehouse it. The shower in the northern part of the state during the past week has been of much benefit to pasture lands. The entire city is still tied up with the influenza epidemic and between that and peace reports the market is at a standstill. Arrivals of damaged alfalfa from the river districts has been the feature of the market this week and is being sold at all kinds of prices according to demand and condition of same. The government is again in the market for a large amount of hay.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.

Fancy Wheat Hay (light 5 wire bales) .....28.00@30.00
No. 1 Wheat or Wheat and Oat Hay .....25.00@27.00
No. 2 Wheat or Wheat and Oat Hay .....20.00@24.00
Choice Tame Oat Hay .....25.00@27.50
Other Tame Oat Hay .....20.00@23.00
Wild Oat Hay .....20.00@22.00
Barley Hay .....20.00@22.00
Alfalfa .....18.00@22.00
Stock Hay (in order) .....18.00@21.00
No. 1 Barley Straw, bale.....50@80
Damaged Hay (all kinds), according to condition.
Other Tame Oat Hay .....22.00@24.00
Wild Oat Hay .....22.00@24.00
Barley Hay .....22.00@24.00
Alfalfa .....22.00@25.00
Stock Hay .....18.00@21.00
No. 1 Barley Straw, bale.....50@80
Damaged Hay (all kinds).....Nominal

SEEDS

Flax, lb. .....8@8½
Hemp .....Nominal
Millet .....5@5½
Rape .....2½@5
Sunflower .....Nominal

Citrus Fruit Market

AT THE AUCTIONS

November 6
New York: 10 oranges, 3 lem. Val. 4.50@13.20, Nav. 5.25-6.40, lem. 10.25-11.95.
Cleveland: 1 orange, 1 lem. Val. 6.85-8.70, lem. 7.65-9.15.
November 7
New York: 7 oranges, 5 lem. Val. 4.25-13.65, Nav. 5.80-5.85, lem. 7.70-10.00.
Boston: 2 oranges. Val. 5.00-11.65.
November 8
New York: No sales oranges owing to strike.
Boston: 2 lem. 4.50-7.70.
Cleveland: 1 orange, 1 lem. Val. 4.55-7.60, lem. 6.50-7.65.
November 12
New York: 5 oranges, 5 lem. Val. 4.60-12.45, lem. 5.35-6.90.
Pittsburg: 1 orange, Nav. "off bloom" 4.55, lem. 3.45-6.80.
Cincinnati: 2 lem. 4.15-6.90.

Los Angeles, Nov. 13, 1918.

The bureau of markets estimate for California's orange crop is 14,322,000 boxes. It divides the state as follows: Northern California 138,600 boxes; Central California 1,339,800 boxes; Southern California 13,000,000 boxes. Last year's total was 7,893,270 boxes.

Off bloom navels are occasionally in the market and claiming good price. Northern and Central California are also sending some new crop navels. All are being well received. Valencias are not so spectacular as they were some three weeks ago. However, market conditions are firm and good prices are being secured.

All lemons are being taken as soon as offered, a keen demand being made by influenza. Prices are ranging from 4.50 to $10.00.

Shipments

Shipments of citrus fruits to date since November 1, 1918: Southern California; oranges 22 cars, lemons 290, total 312. To same date last season; oranges 743, lemons 101, total 844. Central California this season; oranges 22, lemons 31, total 53. Last season to same date; oranges 2, lemons 13, total 15. Northern California; oranges 1, last year same date, none.

SOIL BLASTING

The time is past when it is enough to talk of soil blasting, for there are as many different ways of doing it as there are of harrowing. Unlike harrowing, however, each kind of which has its place under certain conditions, there is just one kind of blasting that is right. The others are wrong. They may be merely ineffective to accomplish the desired purpose, or they may be actually harmful.

The soil should have a heaving, breaking impulse extending over many feet in all directions from each charge of explosive used. Simple as this looks, it is not to be secured except with certain comparatively slow acting powders that are made on purpose for this work. If an ordinary explosive made for blasting hard rock is used in the soil, it pulverizes some of the earth close to the charge, say within twelve or eighteen inches, and forces it into the earth outside that range, making a compact wall that more than once has been dug out and found strong enough to stand alone and hold water.

This kind of pulverizing of soil is bad business. It quickly puddles again. The packing of soil is very bad business, as nothing short of another blasting, properly done, will undo the harm accomplished. The whole effect is limited to a few feet, however, which denotes a very poor blast. The reason is that the violent explosive uses up its strength in grinding to powder the little bits of earth close to the charge.

The slower explosive, with an action designed for this business, instead of grinding a little earth, tends to lift large masses. Probably before much or any of the gases have escaped to the surface, the soil for ten to fifteen feet or more about each charge has been lifted and disturbed. The effect after all is over is that the whole area has been split, shattered and crumbled.

Pot holes after blasting are an indication either that the powder used is too violent for the purpose, or that the soil is too damp. Once in a while proper blasting will leave small cavities underground, or rather spaces in which the soil is so loose as to permit a stick or bar to thrust through with little effort. But violent powder almost always leaves large pot holes, while the blasting with any powder in wet soil is likely to cause them. It must be understood that these cavities are well underground and that the surface is bridged over. A man even may walk on the surface without sinking into the hollow beneath. They can be detected by ramming a stock or bar into the blasted ground.

The foregoing comments apply alike to blasting ground for trees and for other crops. There is no essential difference—it is all intensive tillage of the soil, with the idea that root penetration will be assisted, that drainage will be bettered, that the moisture holding capacity and capillary movement of water will be helped, and that a general mellowing effect will be secured as a secondary effect through the deep penetration of cover or other crop roots which die after a season.

SEED CORN

California corn growers have found that well selected acclimated seed means success if other conditions of a corn crop are met. The best of seed secured in the East will not produce as well the first year as the second and third. On the other hand, there seems to be a time when California seed runs out, but if proper selection is made each year, it is very probable that this running out feature will become less prominent. This is the time of the year for selecting next year's seed corn, or at least it will be time in a very few weeks. Careful observation of the behavior of individual stalks of corn may aid in selecting the ears which will give thrifty, bearing plants next year. As to what good seed corn should be the department gives the following:

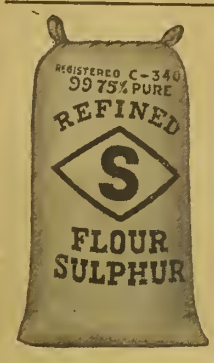
Well adapted to the seasonal and soil conditions where it is to be planted. Grown on productive plants of a productive variety. Well matured and preserved from ripening time to planting time in a manner that will retain its full productivity. This sort of seed corn can best be secured by gathering the ears from the stalks as early as they mature in the fall, by promptly drying the seed immediately after it has been gathered, and by keeping it constantly dry and safe from rats, mice and insects.

HUMUS

Humus is a constituent of the soil that plant life requires. It is the substance that makes the soil buoyant and mellow. It is the opposite of sour, heavy soil. It stimulates plant growth by making possible the influx of the sun and air into the ground. It does more than this. It dissolves solid matter and transforms it into the elements that can be used for plant growth. Humus is the product of decaying vegetable matter. It comes from the turning under of corn-stalks, stubble or some growing crop such as clover or peas, and all straw and refuse that accumulates when crops are harvested. A growth of growing vegetation ploughed under at the proper time is a wonderful soil stimulant.—Fruit World of Australasia.

Owing to lack of markets for their corn, farmers in Argentina, South America, are in some cases disposing of it for fuel at 40 cents per bushel.

The province of Milan, Italy, shows a decrease in live stock, based on the census of 1908, of 21 per cent for horses, 18 per cent for mules and eight per cent for swine.



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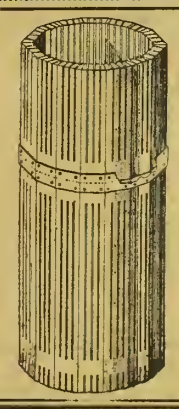

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Layne & Bowler
Irrigation Pumps
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Ask for latest circular—No. 30
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Over there! Over here

THROUGH mud and rain, through gas and shrapnel, our boys are pushing on to Victory. It's a task that tries the souls of strong men. They *must* have rest and recreation.

At the canteens, they buy the little comforts of life at cost. In the war-service huts, they find everything needful to write the letters you receive. They attend a show, see a "movie" or hear good music—all free. Always, they find in the hut secretary a friend. They forget for a while the grim scenes of war and return to duty refreshed. These are some of the things that keep fighting men at top notch.

YOURS is the task of growing the food these fighting men must have. The toiling millions in the munition factories, arsenals and shipyards also look to you for sustenance. And they do not look in vain.

Your work is vital to winning the war and you are doing it manfully, mindful of Country, forgetful of self. You are working early and late, putting forth your strength unsparingly. You have produced bounteous crops that feed a hungry world. Yet to you are spared the comforts of home and the presence of loved ones. Yours are the privileges of earning and giving.

Give to "keep good men good and brave men strong." Give to bring cheer to those who are daring their all for you and yours. And when the boys come home victorious, you can honestly say, "I have done my part, too. I have backed you to the limit."

Seven allied activities, all endorsed by the Government, are combined in the United War Work Campaign, with the budgets distributed as follows: Y.M.C.A., $100,000,000; Y.W.C.A., $15,000,000; National Catholic War Council (including work of the Knights of Columbus and special war activities for women), $30,000,000; Jewish Welfare Board, $3,500,000; American Library Association, $3,500,000; War Camp Community Service, $15,000,000; Salvation Army, $3,500,000.

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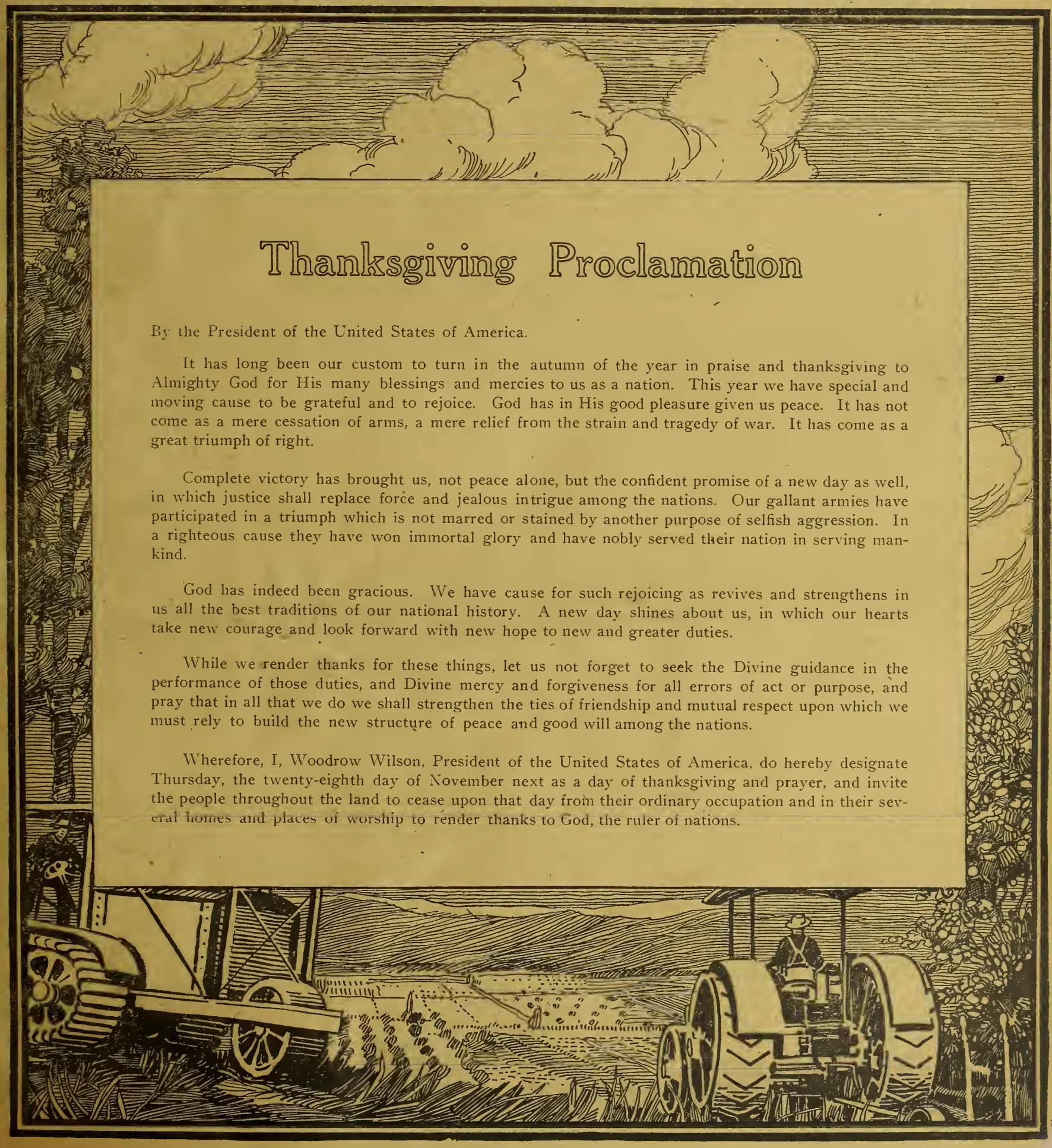
California Cultivator

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — November 23, 1918 — No. 21



Thanksgiving Proclamation

By the President of the United States of America.

It has long been our custom to turn in the autumn of the year in praise and thanksgiving to Almighty God for His many blessings and mercies to us as a nation. This year we have special and moving cause to be grateful and to rejoice. God has in His good pleasure given us peace. It has not come as a mere cessation of arms, a mere relief from the strain and tragedy of war. It has come as a great triumph of right.

Complete victory has brought us, not peace alone, but the confident promise of a new day as well, in which justice shall replace force and jealous intrigue among the nations. Our gallant armies have participated in a triumph which is not marred or stained by another purpose of selfish aggression. In a righteous cause they have won immortal glory and have nobly served their nation in serving mankind.

God has indeed been gracious. We have cause for such rejoicing as revives and strengthens in us all the best traditions of our national history. A new day shines about us, in which our hearts take new courage and look forward with new hope to new and greater duties.

While we render thanks for these things, let us not forget to seek the Divine guidance in the performance of those duties, and Divine mercy and forgiveness for all errors of act or purpose, and pray that in all that we do we shall strengthen the ties of friendship and mutual respect upon which we must rely to build the new structure of peace and good will among the nations.

Wherefore, I, Woodrow Wilson, President of the United States of America, do hereby designate Thursday, the twenty-eighth day of November next as a day of thanksgiving and prayer, and invite the people throughout the land to cease upon that day from their ordinary occupation and in their several homes and places of worship to render thanks to God, the ruler of nations.

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877 Combined with California Cultivator 1914. Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916.

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Saturday, Nov. 23, 1918

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

GREATER PRODUCTION

Peace has not ended the problems confronting the American farmer, and it is apparent that the federal department of agriculture contemplates a program of more strenuous farming operations. The editors of farm papers of the country have been summoned to Washington to confer with Secretary of Agriculture Houston on the agricultural situation in this country. No announcement is yet made of the details of this conference, but the editor of this paper, who is now in Washington, will keep Cultivator readers informed. We think that without question California producers will devote as much energy and enthusiasm to working for world peace as they did to working for victory.

STAY ORGANIZED

During the past year and a half the producers of this state have formed numerous organizations. Most of these organizations were made possible through war conditions.

Enough constructive work has been accomplished to indicate the far reaching possibilities of organized effort, when directed along sane lines.

The problems of peace promise to be greater than the problems of war. War is temporary; peace must be permanent.

In the process of readjustment many grave problems must be solved and constructive policies formulated, and if the producers of this country are to receive the consideration they are entitled to, they will need big, strong, working organizations.

LOS ANGELES EXPECTS YOU

The people of a state or county or district make the fairs. Without their support no fair can exist. The success of fairs is judged always by the attendance and each person within reach of a fair is responsible for the attendance.

Of course it is recognized that fairs and expositions are educational institutions. They, therefore, perform a distinct service to the community and the people can show their interest and appreciation by attending. Perhaps they could not afford to go for this purpose alone, but they are certain to receive some valuable suggestions and inspirations that will aid them in their work.

The Liberty Fair, now open at Exposition Park, Los Angeles, has stressed educational features to a degree in keeping with the original motive for bringing the fair into existence, namely, as a powerful aid in increasing the production of meats, grains, fruits and dairy products.

Now that the war needs are past, the greater needs of a hungry world claim our attention.

The message that the Liberty Fair was to deliver in war time is of as great, or greater, importance in peace times.

And besides, if you haven't properly celebrated the coming of Victory and Peace, the stage is set out at Exposition Park.

GRAIN FOR SALE

Judging from the letters that are coming to our desk, there is widespread dissatisfaction among the bean and barley growers of California over the present state of the market.

The growers want to know why they are not offered more; whether the price will improve; if it is true that the food administration plans to enter the market as a buying agent for Europe, etc.

Frankly, we have no definite information on any of the above questions, but our advice to the growers is not to get panicky.

The food situation in this country is rather misleading. Reports indicate that the warehouses and elevators at the terminal markets are filled to their capacity. Movement of grain has necessarily been restricted the past few months because of the amount of tonnage diverted to transport work.

Government figures indicate that there is a net decrease of primary grains, and in view of the fact that the United States will be called on to maintain our supplies to our allies and in addition will be expected to furnish vast quantities of food to the defeated powers, it is our opinion that, with a general release of shipping, the congested terminals in this country will be relieved and the movement of grain from country points to the seaboard will develop to large proportions.

With a hungry world clamoring to be fed, raw food is valuable property.

CAR WINDOW NOTES

Going to Washington—Washington, D. C.!

Going to the capital of the world to learn about agriculture and what our government expects of the farmer—especially the farmer in California, Arizona, the Northwest, the Whole West.

Like a genuine country boy, I've glued my eyes to the car window.

Awful interesting thing, a car window is.

I've seen gardens, alfalfa fields, orchards of fig, olive, pomegranate, orange, all the fruits of the earth, and vineyards where the most luscious of all grapes grow, more—contented homes.

We climbed the grade till ruddy apples and pears appeared.

Then the sages, greasewoods, ceanothus and chaparral.

A look backward over the hills and valley, one of the richest in the world—sunny, prosperous, homeland—California!

Tree-yuccas, sages dwarfed, desert, desolation. The train stopped. The wind howled around the car. Lump in throat—want to go back.

The Colorado—worth more than Rockefeller to the Southwest.

Up. Pine, fir and patches of snow.

San Francisco peaks, glistening white and floating off a great banner of white as the wind endeavors to tear off its cap. The sun's rays working more quietly will succeed better.

Canyon Diablo. Rocky sides very deep, very diablish.

Stock ranges, miles and miles, with little feed and stock in poor condition.

Little town. School house dry goods box type of architecture, without sage brush or even a fishin' hole near it.

Country church, dwarfed little spire with mute appeal to look upward and not too critically at broken windows and siding removed—perhaps—during some cold spell.

More trees. Cars on siding with logs.

More scenery and stovewood.

Perhaps better farming from tomorrow's car window.

SEND THE BOYS HOME

A Fresno subscriber writes: "This is the time of the year in California when the grain must be planted, and we need the help of our boys. They should be returned as soon as possible from the army in France."

True, and we believe they will be. The need of food production was never so great, and none appreciate this more than those in control at Washington.

But the "as-soon-as-possible" time may not come as swiftly as we all wish. Eastern Europe is in turmoil. Western Europe is almost prostrate and will need every possible aid in reconstructing homes, in blasting out concrete trenches and in getting the soil into producing condition.

Presumably French soldiers will be discharged in greater proportion than will the American.

There will be need of policing, of guarding and—possibly—of some fighting yet. As the editor writes this aboard train eastward bound, there are more men in uniform than there are civilians. Whether these men go "across" or not we do not know; presumably many of them will. Our army is not westward bound yet.

A conference in Washington this week has under consideration the needs of American agriculture. Every one of the participants, many of whom are connected with the agricultural press, are primarily and vitally interested in the farm. They know the need that "The boys come home."

But America is vastly bigger than she was a couple of years since; her problems have increased. We started out to preserve our own liberties and have become big brother to all the world—excepting William Hohenzollern.

Buy more tractors and farm power. Plan work to best advantage. Produce more—and still more.

Pretty soon the boys will come home and work as they have fought.

World Doings

A Hungarian republic has been proclaimed in Budapest.

British casualties in the war, it is announced in the house of commons, total 3,049,991.

Reports indicate that the War Work Campaign has secured generous oversubscription of the amount asked.

Several clashes are reported between American and British forces and Bolshevik troops south of Archangel.

Edward N. Hurley, chairman of the United States shipping board, has gone to Europe to arrange for the prompt return of our overseas forces.

Wages of railroad telegraphers have been again advanced by Director McAdoo and eight hours prescribed as a working day.

Dispatch from Amsterdam: "So lavishly did the German kaiser bestow iron crosses during the war that they now are selling for five pfennig (one American cent) apiece."

Draft slackers who have taken refuge in Mexico have made tentative "offer" to return to the United States on easy terms. The department of justice has not accepted.

White bread, entirely of wheat flour, is back on the American table; California and other sugar producing states are now allowed four pounds of sugar per capita.

The Dardanelles are open. The British are occupying the forts along the lower Dardanelles, which the Turks are turning over. They have already placed 200 cannon in the hands of the British.

Instructions have been issued to all bureaus under the war department for slowing down work on war material in such a way as to give time for industrial readjustment and to give the war workers a chance to resume civilian work. Over-time, holiday, and Sunday work has been stopped.

The Allied armies are on the march toward Germany and German forces are slowly withdrawing. Allies are bringing up rail and wire facilities, guns and ammunition, to the present line. Airplanes have been used in feeding civilians and in mail and dispatch service.

Ships carrying 200,000 tons of food for Northern France, Belgium and Austria now are en route. They are proceeding under sealed orders to Gibraltar and Bristol channel ports, and on arrival will await word from Food Administrator Hoover as to their final destinations.

The refugee populations which have been freed in Belgium and France are moving back to their homes—or to the place where their homes once were—in the Hun-devastated regions. Great preparations are under way for the entry of the king and queen of Belgium into Antwerp. Brussels is not yet freed from the Germans.

President Wilson has decided to attend the council of peace in France. Although not yet officially announced, it is reported that the peace delegation from the United States, headed by President Wilson, will also comprise E. M. House, Secretary of State Lansing, Secretary of War Baker. The fifth member is variously reported to be Ex-President Taft, Charles E. Hughes, Former Ambassador Morgenthau, Elihu Root or Justice Brandeis. There is manifested a disposition to delay the holding of the peace conference until the political situation in Europe has somewhat crystallized.

Rumors persist that the former German emperor has returned, or is planning to return, to Berlin to take advantage of the general turmoil into which Germany has been thrown since cessation of hostilities. Junker influence is suspected in the extreme socialistic demands now being made in many European countries. Statesmen in Allied countries and the more moderate branch of the socialists in Germany are in agreement in suspecting the former emporer and his following of still being capable of and perfectly willing to hatch more trouble for the world in general. The Allies however have not gone to sleep on the job.

The world is passing strenuous days during the armistice period, with uprisings not only in Germany but in hitherto non-belligrent countries. It is reported that the queen of Holland has been requested to abdicate; that King Albert of Belgium has been asked for a constitutional monarchy; that the red flag is threatening to take possession of governmental affairs in Switzerland and in Sweden; that the king of Bavaria is missing; that Esthonia, Livonia, Courland and Oesel Island have decided to form a joint Baltic state; that Grand Duke William Ernst of Saxe-Weimar has abdicated; that republics have been proclaimed in Wurttemberg and Hesse, etc., etc.

Pruning Deciduous Fruit Trees

By Leonard Coates

THIS old subject is always new, because of constantly added experience. There can be no end to a discussion of anything that lives, be it vegetable or animal. And, moreover, so long as mankind exists will opinions vary, which is as it should be, or it would be a tame world we live in.

The difficulty in formulating exact rules as to pruning lies chiefly in the fact that soils, moisture quantity, extremes of temperature and other physical conditions vary greatly. A tree may with impunity be planted deeper in sandy soil than in heavy adobe, but that does not change the foundamental law that there is a "collar" to every tree, or an exact point designatlng which part of it should be above and which part below the ground.

So with pruning: While there are certain principles applicable in every case, in practice a certain modification is necessary for the reasons just mentioned.

The prime object is to assist the tree to produce fruit as soon as possible while maintaining a sturdy and vigorous growth. How shall we do this with

The Apricot

to begin with? Take the climatic extremes of winters in Solano County and Watsonville or Aromas in Monterey County, and it would not be practicable to prune the trees after one pattern. In the former section the trees are headed very low, allowed to branch out at a very acute angle and kept very vigorously shortened in every year. This low, spreading form is intended to prevent, to a great extent, injury from the direct rays of the sun, the tree acting as its own unbrella, as it were, while, if branches were longer, and more vertically inclined, they would bend to the weight of foliage and fruit, and get sunburnt. Furthermore, it may be considered a rule to always prune more heavily in proportion to the greater aridity of the atmosphere. Consider for a moment the tremendous evaporation going on in the Solano climate as against the loss of moisture ln the humld atmosphere of Monterey: and yet both are noted apricot sections, and, more strangely still, both using the same varlety, the Royal, whlle in Alameda and Santa Clara Counties the Blenhelm is always first cholce. In these latter counties the practlce of prunlng the aprlcot is midway between the two extremes.

The Almond

is very closely related to the apricot, and yet it is still deemed by many rank heresy to prune it as you would the apricot. Thls idea was born of expediency and ignorance, and should have "died a-borning": expediency, because lf the almond would grow and bear good merchantable crops without pruning, why prune it, and ignorance, because of a lack of a little botanical trainlng in plant classification. Therefore, treat the almond and the apricot similiarly.

The Prune

The necessity, or even the advlsability, of pruning the French prune tree regularly is denied by most growers, and practiced by still fewer. And yet how it tries to renew itself when an old, lichen-covered, semi-decayed limb breaks off, and how much finer the fruit on the strong young shoots that force their way up, showing that the only part of the tree that the owner can't reach — the root — ls as good as ever!

I am often asked: "How long will such a fruit tree live?" I answer, "As long as it is properly cared for." And this is true, as one does not figure beyond one's children and grandchildren. But the fruit tree usually has a different boss, or guide, or trainer two or more times in every decade of its life, and, as a result, dies prematurely.

Is it not better to prune the prune little and often than to mutilate it by savage butchery when, its strength exhausted, it refuses longer to bear profitable crops?

The Cherry

is another tree whose culture is largely carried on in a school of prejudice. It is usually taught that the cherry must not be pruned at all, or at least not after the first year or two after planting. The result is a tree 20 or 30 feet high, the crop being gathered at great expense, hundreds of fruit spurs being broken off every year, the fruit being forced to extremities of limbs which thus become unduly exposed to the sun, causing a dlseased condition of the bark.

The walnut, too, is commonly regarded as a tree which must not be cut back. You need not cut back the branches if you don't want to, and if you are satisfied with its shape, but there is no reason, botanical, promological, horticultural or physiologlcal why you should not prune the walnut.

The Peach

is pruned more closely than any other fruit tree, as it bears its best fruit on the young wood, and we must get a sufficient annual extension of such growth. It has, also, a greater tendency to over-bear, when the fruit would be small.

The Apple and Pear

may be said to require more of an automatic, mechanical training than other deciduous fruits. After the young trees are established, an annual pruning to balance the tree and enable it to hold its crop without props is all that is required. Always remember that pruning is less near the Coast and more in the interior valleys.

These generalizing remarks are made with no apology, knowing the intelligent class of Cultivator readers who wlll understand how to adapt any of these suggestions to their own immediate conditions and environment. Boiled down, or very briefly stated:

Do not plant tree deeper than lt stood in the nursery.

Leave the tree at least 24 lnches above the ground after planting. Thls will enable you to select the main branches to remain from one to two feet from the ground, with several inches between them, instead of forcing them all to grow from the top, which must happen if tree is headed too low. Shade at once with some "protector."

In one year from planting prune to leave three branches spaced as in preceding paragraph, and shorten these to about five inches. The subsequent growth from these will be nearly upright, with a more or less spreading direction. These three branches are the real foundatlon of the tree, and will never break if so started.

Two years after planting these three branches will have so increased

Continued on Page 542

Drake Almond Tree
Pruned regularly every year—close cutting and open head.

Liberty Fair to Open

THE California Liberty Fair will open! After a six week's battle with the flu, the strength, vigor and optimism of this youngest of Western fairs was sufficient to bring it through the epidemic that has been sweeping the country.

The gates were scheduled to open six weeks ago, October 12, to be exact —but on the day set for the opening the board of health issued an order preventing all public gatherings.

Much has happened in the intervening time. Originally the fair was planned as an aid to increased food production—it was to be "a war fair over here to help the warfare over there," and as such it would undoubtedly have proven a powerful stimulant to increased production of all food products, but now that the war is won, it has been deemed appropriate and fitting that the whole organization be turned into a great Victory and Peace celebration, and it will be a Victory Fair when the gates open to the public.

But the real motive for the fair is just as important—more important, as a matter of fact—now than before the armistice was signed. Food won the war—but the world needs food even more keenly now than when battles were being fought on the various fronts. That the world's larder ls dangerously low was made plain immediately after the armistice became a fact. The first call that came from stricken Europe was for food.

So even in a larger way the California Liberty fair finds an opportunlty to be of servlce to the world.

And how well it will meet the obligation is evidenced by the completeness of the almost endless exhibits.

It would require a great deal more space than is at our disposal were we to attempt to vis lize all the different departments and exhibits. Just picture the most complete fair you ever attended, and place it in a setting that is beautlful to a degree rarely associated with fairs, and you wlll have quite a good ldea as to what to expect.

Among the leading features is the large exhibit made by the United States government whlch completely fills the armory.

The agricultural and horticultural buildings are filled to the roof with exhiblts that indicate the possibilities of this state.

The manufactures and liberal arts building contalns over 100 separate exhibits. Every square foot in the tractor tent is reserved. The University of California exhibit is housed in a separate building and the overflow is given space in the horticultural building.

Perhaps the most striking feature of fhe fair, aside from the completeness of it all, is the character and quality of the live stock show. The management has made a partlcularly strong effort to assemble, not only the best herds and flocks in California, but some of the leading herds from the older live stock sections. It is doubtful, excepting the Panama-Pacific International Exposition, if any California fair has ever attracted live stock from as wide territory. There are herds from Missouri, Wyoming, Washington, Colorado, Arizona, and from Canada, as well as many California herds.

The Hereford show promises to be exceptionally strong, although the exhibitors are all from outside this state.

The visiting Shornhorn herds will be forced to measure strength with California cattle, and it is certain that the local exhibitors will hold their own.

One herd, but one of the best herds of the Angus breed, will be on exhibit.

The showing made in the fat classes, particularly the car load lots, will be the most extensive staged in this state.

The swine barns are full—all California herds, and of a class that indicates the remarkable progress made in this branch of animal husbandry in California during the past few years.

California shows always bring out splendid herds of dairy cattle. Indeed, this state has some of the top herds of the different breeds and many of the best are in the stalls at Exposition Park.

One of the features of the live stock divlsion will be the extensive showing made by the milk goat industry. Every important breed is represented, and the showing made clearly demonstrates the importance and rapld development of thls industry.

The sheep department is hardly up to what mlght be expected, but the sheep breeders of Callfornia are capable of making a much stronger show.

The horse department will not be burdened with entries, but sufficient numbers are in the stalls to insure a pleasing show.

Many racing events are on the cards and a matinee horse show is planned for two afternoons.

As a whole the live stock show will be good and will undoubtedly prove an inspiration to many new breeders.

One feature of the fair that should not be overlooked is the opportunity to visit the art gallery and the museum. There is not a state fair that the writer is familiar with that offers such a splendid exhibit of the fine arts, and certainly none have an exhibit of natural history that compares to what may be seen at Exposition Park.

The management has provided a program for each day that is of the widest interest.

Liberty Fair will be a Victory Fair and every man, woman and child in California is invited to attend and celebrate in a fitting way the victory that has come to the United States and the nations allied with us, and to take home the message that is evident throughout each department—the message of needed increased food production.

Agricultural News Notes of the Pacific Coast

Northern California

Thirty-five thousand acres of rice are being harvested in Butte County.

Many silos are being built in Shasta County this fall.

Happy Valley, Shasta County, is picking a big olive crop.

Heavy frosts in Nevada County have caused a rush to fill silos.

A large acreage will be sown to wheat in the Redding district of Shasta County.

Sierra County and Tehama County have both made the wearing of influenza masks compulsory.

All the olive factories in Tehama County are busy. Most of the olives are pickled though some oil is made.

The olive crop on the Natomas project in Sacramento County has been very satisfactory this year.

Butte, Tehama and Sacramento Counties have had an exceptionally heavy yield of olives.

Headline in a San Francisco paper: "Price of eggs drops to 80 cents a dozen!"

Mrs. Fowler, home demonstration agent, is visiting the farm centers of Butte County this month.

There has been serious loss of honey in Butte County through the inroads of foulbrood.

Rice mills in Butte County are now running day and night on the new crop.

Butte County reports the cold weather putting color into the oranges rapidly. Several carloads have already been shipped.

There will be local meetings of the El Dorado County farm bureau at Union, November 22; North Side, 26; Placerville, 28.

Siskiyou County had an inch of snow the first Sunday in November. Seven inches fell on the divide between Sisson and McCloud.

According to the last report of Horticultural Commissioner Mills of Butte County prunes have the largest orchard acreage, 6430.

A successful orange grower in Thermalito, Butte County, reports having raised enough Blackeye beans in his orchard the past year to pay all expense of upkeep.

A meeting of officers of the Northern California Counties Association and interested land owners is soon to be held at Hayfork, Trinity County, to go into details of the proposed irrigation district.

Early construction of the Feather River highway is promised. The Sacramento Valley Development Association has received assurance that $400,000 of federal money will be available for building operations as soon as construction work becomes possible.

Farmers on the first unit of the Durham State Land Colony have organized a stock breeders' association. They have adopted the Holstein for dairy cattle, Duroc Jersey for hogs, Durham for beef cattle, and Romney Marsh and Rambouillet for the two breeds of sheep.

It has been announced by the management that the sugar factory at Hamilton City will not be operated next year. The reason given is the labor situation and the impossibility of securing beet sugar seed until the end of the following year. The large acreage owned by the company will be planted to grain.

Central California

Several crews of orange pickers from the Woman's Land Army are at work in the Terra Bella district.

Fresno olive growers are showing good yield. Plantings have been light this season.

Kern County alfalfa growers are objecting to the low prices offered for alfalfa hay.

Delano, Kern County, reports a large acreage of kafir corn being harvested.

Plantings of rice in the Delano district of Kern County have proven very satisfactory.

Growers of castor beans in the Porterville district report returns of about $60 per acre.

Terra Bella canneries are still shipping canned tomatoes on government contract.

The Sanger district of Fresno County is shipping out oranges which are well over the maturity test.

Orange pickers are busy in the Springfield district of Tulare County. Six to eight cents per box is being paid for the picking.

The Associated Peach Growers has shipped 2000 tons of peach pits to the government for making into charcoal for gas masks.

Olive growers are somewhat anxious over interpretation of the government ruling as to maturity, which makes no mention of color.

The California Associated Olive Growers has filed suit against a member for making sales outside of the association.

The Waterford irrigation district has made application to the state water commission for permission to appropriate 6000 miners inches from the Tuolumne River above Waterford.

Long Staple cotton grown this season in Kern County is reported of splendid texture. The outlook for the cotton industry in that county is regarded as promising.

The government notifies Geo. C. Roeding, who has charge of sending peach pits to government stations for use in making gas masks, that no more pits will be needed.

The effort of the California Prune Growers to secure an increase in prune prices has been fruitless. Permission was refused by the federal government.

"The Sunsweet Standard", the organ of California Prune and Apricot growers, is urging all growers to maintain standard of their product, selling damaged fruit on its merits only.

Henry Markarian, president of the Central California Fig Growers' Association, and successful fig grower of Fresno County for 30 years, has passed. He was a native of Armenia, coming to this country in 1882.

Commissioner Collins of Tulare County reports as to this season's work on citricola scale, which began July 17 and ended September 9. A total of 700 acres has been treated, liquid gas taking the place of the former cyanide and acid treatment.

Several olive growers of the Porterville district have announced their intention of refusing to deliver their fruit to association plants, with the declaration that under the form of contract signed by them they are no longer members of the association.

Southern California

Jam is being manufactured from wine grapes at Hemet.

Imperial Valley's winter lettuce crop is now well above ground .

Saticoy, Ventura County, is being pestered by walnut thieves.

Orange County sugar beet growers are now signing up contracts for 1919.

Liberty Fair will open at Los Angeles Exposition Grounds November 21. A big fair is promised.

Japanese cantaloupe growers in Imperial Valley report over 15,000 acres for 1919.

The beekeepers of Imperial County have begun an organized fight against foulbrood.

The government has just placed an order for 100,000 sacks of Pinto beans at seven cents.

The Los Angeles County farm bureau hopes to be able to hold its annual meeting in the very near future.

San Dimas is proud of the big new orange marmalade factory put up by the citrus growers.

Southern California's acreage of celery is only half that of last year; Orange County only having in 200 acres.

Prof. Hauser of the poultry department of the state university is now in Los Angeles County giving demonstrations in culling laying hens.

Preparations are being made for the ninth annual National Orange Show to be held at San Bernardino February 14-23.

It is estimated that Imperial Valley will ship out 40 carloads of turkeys during the Thanksgiving and Christmas season.

The annual meeting of the Imperial Valley Beekeepers' Association was held in El Centro Tuesday, November 12, with a large attendance.

Bean growers are being urged by the association to hold on to their beans. Stocks are moving rapidly from the state and prospects are for better prices.

The California Lima Bean Growers' Association has sent out $2,000,000 as partial payment to growers who delivered Limas during the month of October.

Farm Adviser Gordon of Riverside County has been transferred to Los Angeles County. Mr. Gordon will give particular attention to hogs, poultry, pet stock and truck crops.

Word has been received that the government price for cleaned castor beans has been raised from $3.15 per bushel to $4.50. The government is also anxious to buy wild beans.

The citrus experiment station at Riverside is making a chemical study of irrigating waters in Southern California and will for a short time make analyses without cost to irrigators.

A Redlands by-products plant has just finished a large pack of apple butter and is now ready to turn its attention to making of orange marmalade.

The Yucaipa Apple Growers Association has shipped out 80 carloads of apples this season. In addition large quantities have been placed in cold storage and preserved in cans.

It is estimated that there are now in warehouses in San Louis Obispo, Santa Barbara, Ventura and Los Angeles Counties over one million and a quarter bags of Lima beans.

The Coast and General

New York apple growers report brisk demand for their fruit.

The annual meeting of the National Grange was held at Syracuse, New York, November 13.

New York had 30,000 acres planted to cabbage this year; Wisconsin, 12,500.

The food administration has prescribed the use of standard fillers for egg cases.

Prune growers of Polk County, Oregon, report the biggest crop they have ever had and top prices.

The government has contracted for 9,000,000 pounds of evaporated apples in New York.

The Washington State Horticultural Society is planning to hold its annual convention at Spokane, December 10 to 13.

Seattle, Washington, reports sale last week of 60 carloads of Weinsaps from the Wenatchee Valley at $1.90-$2.00 car run.

Washington egg producers are getting bigger prices but are preparing themselves for a slump after Thanksgiving.

Quicker routing of carloads of dairy products to the East has been secured through the efforts of the National Poultry, Butter and Egg Association.

The latest federal estimate of the population of Arizona is 409,203, an increase of 161,904 over the estimate made July 1, 1916.

Potato buyers in the southeastern Washington potato district are offering only $20 f.o.b. Yakima, consequently growers are storing in the hope of getting $30 to $35.

The Wenatchee district of Washington expects to market about 6400 carloads of apples. Some 600 carloads of culls will be shipped to by-products factories.

The crop of Greek currants is proving to be very short this year, whereas a very large crop was anticipated. Turkeys have been bringing 30 cents a pound in Kansas City markets.

C. B. Green, superintendent of the government employment bureau at Hood River, Oregon, has furnished orchardists with 1549 harvest hands from Portland, mostly girls and women.

Cranberry growers are among those well pleased with the increased sugar allowance, as they say that the scarcity of sugar so far this season has had an alarming effect on the cranberry demand.

W. A. Acorn, a Washington creameryman, says the dairy industry in the Colville Valley is growing. Dairymen are improving their herds and weeding out the poor cows. Some pure bred cattle are being brought in, Holsteins and Jerseys.

Potato growers of the Yakima Valley are considering the formation of a potato sales agency. The movement is the outcome of the decision made by the potato growers' association to hold potatoes of first grade at $40 a ton.

Believing that the influenza situation will permit, officials of live stock shows have fixed the following dates: Northwest Live Stock Show, at Lewiston, Idaho, November 28 to December 4, inclusive. Pacific International Live Stock Show, at Portland, Oregon, December 9-14, inclusive.

Seasonable Work in Insect Control

By E. Ralph de Ong

HOW few gardeners or farmers plan their cropping systems with the idea of avoiding insect losses. The usual custom is to plant whatever will bring the highest price and for which their land seems adapted irrespective of any insect invasions. Timely work in the orchard through the fall and winter in the control of certain insects is the best insurance of a clean crop the following season. More loss will be avoided by many kinds of insects through good cultural practices in the field and garden and by proper rotation of crops and choosing of proper planting dates than by any spray program, no matter how elaborate. Not that we can give up the latter practice, nor control all insects by improved farm practice, but methods of fighting have their places and it is only by combining the two that the greatest success will be obtained. The following points have been noted to call attention at this time to seasonal work which should be done now.

FIELD CROPS

Cutworms

Cutworms cause heavy losses in beet, corn and tomato fields during the early spring and yet the insects are not as numerous as they are in a meadow where their presence is unnoticed. Why? Because in meadows and grain fields the stalks which are cut sprout up again or the plant in stooling covers up the loss. Besides the number of plants per square yard is very much greater in the meadow or grain land than in a beet or tomato field. Hence newly broken sod or any field where cutworms are apt to be abundant should be sown to grain for one year rather than planted to a cultivated crop. The usual habit of the cutworm is to feed on the tender stalk just at the surface of the ground, the greatest damage occurring in crops such as corn and beets where a large portion of the ground is bare, thus concentrating the attack on the young plants which are usually just close enough together to occupy the ground when mature. The cutworm works at night and retreats beneath the surface of the ground near the plant last fed upon during the day so that the only sign of loss is the wilting plant or simply the missing hill. These worms are the immature forms of large heavy-bodied moths, usually an inch or more in length and of a dusky gray color. Many of our species lay their eggs in the fall, commonly selecting grass or sod land. This will explain the greater damage often found in cultivated crops adjoining permanent grass land. The cutworms hatch from the eggs deposited in the grass, feed for a short time in the fall and are dormant in the winter, becoming active again in the spring.

To avoid injury from cutworms plant newly broken sod to grain rather than to beets, tomatoes or corn, or any crop which only partially occupies the ground during the early stage. Grain or hay crops will stand much heavier attacks without serious loss as stalks which are cut off will be replaced by stooling and besides, the attack is not concentrated on scattering hills or widely separated rows, but the plants are numerous just as they are in the natural feeding ground of this insect. If sod can be plowed late in the summer the field loses its attractiveness for moths and few eggs will be laid. After September or the middle of October in many places in the state the overwintering cutworms are present, deep fall plowing is then of some value, especially if followed by heavy rains and cold weather as the larvae would probably not find their way to the surface. Sod plowed in the spring will be loose and friable, allowing the worms to work to the surface and attack any planted crop. In this case it is well to delay planting as the heaviest attack usually comes after warm weather, the hibernating worms soon maturing and changing to moths.

Poisoned bait scattered over the ground just previous to planting will destroy many of the overwintering larvae.

Wireworms

Wireworms are similar to cutworms in their preference to sites for egg laying, they commonly choosing grass land, as their larvae are, to a large extent, root and tuber feeders. There is this difference between the cutworm and the wireworm, the latter usually requires two or three years for its development, while the cutworm matures in from two to six months. The adult of the wireworm is a long, slender, flattened beetle, commonly called a click beetle. The larva is reddish brown, with a dark, cylindrical body, the larger species being one inch or more in length. It feeds on tender roots and especially the fleshy stalk of many of our common vegetables and field crops, such as beans, beets, spinach, corn and potato. The latter is attacked freely, both in seed tubers and the growing plant, the larva burying itself in the tuber and when abundant may destroy the entire stand.

Our more common species lay their eggs in May and June, preference being shown for ground with heavy vegetation. During the first year of their life these larvae are quite small, attaining the size which we commonly know only in the second year of their life, the second winter is probably passed in the larva stage, feeding for a short time early in the spring and then they pupate and emerge shortly as adult beetles in May and June.

Wireworms feed in the moist upper layer of soil early in the spring, but with the coming of hot dry weather they migrate to the subsoil and feed at these lower levels, although irrigation may bring them nearer the surface for a short time. During the winter little damage is done by these insects in the colder part of the state, activity beginning in the early spring months.

Control of wireworms by means of chemicals or commercial fertilizers has not been successful on a large scale, dependence having to be placed on farm practice and careful choosing of crops and planting dates. Plowing is of some advantage in controlling insects which live in the ground, especially beetles, as when in the pupal stage (i. e., transformation from worm to beetle) they are very easily injured, and carefully plowing and harrowing at that time will destroy many of them. Since these beetles pupate rather late in the spring, fall or winter plowing has no effect, but rather it should be delayed until the last of March or April. The dates will vary in different parts of the state and with different species of beetles. For more exact information send specimens of insects to the University of California. Egg laying coming late in the spring there is no opportunity for the prevention of infestation of the soil by fall plowing of grass land as in the case of cutworms. Also a feeding period extending over almost two years makes them a much more serious pest than cutworms.

Low, moist grass land is especially subject to wireworm attack and when such ground is to be broken up and cropped it should, if practical, be plowed in the early spring and allowed to lie fallow for a few weeks. By this method many pupae will be killed and also the ground will be less attractive to the beetles for egg-laying. Grain should occupy the ground for a year after the spring plowing, that is, through the winter and the following spring. By this time most of the wireworms have matured, and cultivated crops, such as beans and potatoes can be grown with a greater degree of safety. In soils where these insects persist for many years the ground may be plowed early and left without harrowing so as to dry it out thoroughly, then plant as late as possible, preferably the first of July, using extra seed so that a stand will be secured in spite of some loss of plants. Leaving land in grass for only a short time gives the insects less opportunity to increase.

Ground Beetles

Ground beetles, Blapstinus and related species, besides the larvae of the root feeding weevils and white grubs, work somewhat similar to wireworms. The beetle Blapstinus being more of a stalk feeder, especially on tomatoes and beans. Their life history is somewhat alike, some living two or three years in the larval stage and others for a less time. But in all cases serious injury results from destroying the natural food of the insect and planting the ground to crops which only partially occupy it for the first few weeks. Avoid planting cultivated crops on land which has supported a heavy crop of vegetation for years just prior to the plowing. If practicable, sow grain for the first crop and preferably with an extra amount of seed.

Wheat Stalk Borer

Wheat stalk borer is an enemy of growing grain. The wingless females of the first generation appear about the first of February. These deposit eggs in the sheaths of the young wheat plant near the developing head. The larvae from these eggs develop in the stalk, soon killing the embryo head of the plant and emerge as winged adults about the first of March. This generation flies about seeking new wheat plants and deposits eggs inside the stalk. Here the larvae develop, usually near one of the joints, the only indication of their presence being a slight enlargement of the straw where they are hidden. The larvae change to pupae inside the stalk and there remain until late fall or January, sometimes remaining in the field in stubble or in the threshed straw.

The principal injury is from the larvae of the first generation as these actually kill the wheat plant outright or cause a heavy stooling which weakens the plant. The larvae of the second generation cause a reduction in the yield, the attacked stalk being somewhat weakened and the grain light in weight. Since the larvae of the second generation live over in the straw the burning of the latter or careful plowing under of the stubble will reduce the injury. The former practice is not to be commended unless it is definitely known that the insect is present in numbers sufficient to cause injury. Rotation of crops is an important factor in the control of this pest as the first generation of females are wingless and their distribution is necessarily limited. Wheat should not follow wheat when heavily attacked but some other grain should be grown.

False Chinch Bug

False chinch bug, a common pest of milo and other varieties of corn and also sugar beets, especially in the interior valleys and Southern California. This insect feeds on the growing stalks and leaves, sucking out the sap but not destroying the plant tissue. Corn fields are attacked by great swarms, which retards the growth materially and may kill the plant. These insects resemble the Eastern chinch bug but are smaller, the females being about one-sixth of an inch long and the males even smaller. In color the nymphs are very light gray, the older adults being much darker or even black. Transparent wings cover the body and project slightly beyond the tip of the body.

These insects increase very rapidly during the summer, a generation maturing in 20 to 30 days and by fall are very abundant. The adults hibernate through the winter in grass, leaves and among cornstalks, the number which survive the winter being dependent on available shelter. Since control of field insects by means of sprays is usually impractical, attention must be turned toward the one measure of protection we have, destruction of winter hiding places. Fields which have been attacked this summer should be plowed carefully this fall, covering all trash to a good depth and harrowing the ground so as to prevent the escape of any bugs. If the corn stalks cannot be disposed of in any other way they should be burned, shocked corn should not be left in the field until late in the winter as this forms an ideal hiding place for the bugs. Heavy growths of vegetation or bunch grass along ditches and fences should be cleaned off and all available hiding places in adjoining fields should be burned or plowed under.

Thrips

A common species, the bean thrips, which attacks many of our vegetables, but especially beans, may cause serious injury, particularly if the host is suffering from drouth. These are minute, winged insects, feeding mostly on the under side of the leaf, causing the latter to pale and dry up. Spraying large areas for thrips is seldom practicable, but attention should rather be turned toward the destruction of the overwintering adults by plowing under dead vegetation and hardy, winter host plants such as radish, mullein, sow thistle and wire grass. These plants are the host during fall and early spring and in this way carry the insect over from one year to another. On fields which have been subject to thrips injury and where it is contemplated growing a crop subject to their attack, a special effort may be made to prevent carrying over large numbers of thrips even though it may interfere with the best farm practice. Infested crops should be kept in as thrifty a condition as possible by cultivation and abundant moisture so that the attack may be better withstood.

Continued next week.

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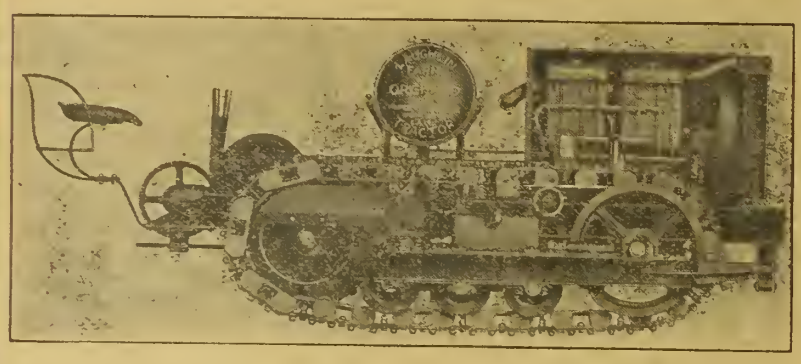

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Gum Disease in Citrus Groves

Written for California Cultivator By R. R. Snowden

IN ALL discussions of the causes and cure of plant diseases it would seem proper to discriminate sharply between primary or fundamental and secondary or exciting causes. With respect to citrus trees in California, notwithstanding the unquestioned discovery of several exciting causes of gum disease and their limited control, its fundamental cause is so patent to any persistent observer as to appear at least to the writer no longer a matter in dispute. It is the unvarying fact of the trees having been buried so that the root crown is from six to 18 inches beneath the surface of the ground.

Citrus trees will stand all kinds and almost any amount of abuse in California conditions without apparent suffering, but the limit at last is reached. While this particular abuse would in Florida be quickly followed by acute distress on the part of the tree, in California from 10 to 15 years will intervene before any alarming symptoms become visible. Yet it should surprise no one that sooner or later this flagrant departure from nature's universal plan is sure to be followed by dire consequences, for no one ever saw a tree of any kind growing in situ with its root crown below the normal ground level. This diabolical system is in vogue and excused because of the necessity of protecting the bud union from the burning sun; but better far bank up the earth around the base of the properly planted tree and later remove it when the latter's own foliage shall provide the needed protection.

Supporting my contention, go into any California citrus orchard of 15 years or older, and it will be found the invariable rule that the trees earliest and most seriously affected with the disease are those which are most deeply buried, and vice versa. This contrast is most marked in the older groves, the writer being familiar with a very old one in Ventura County where the trees in the lower portion have been long embanked with earth washed down from the higher levels, and here a number of the trees have been destroyed by the disease and many others are suffering with it; while in the higher portions where the root crowns have been long exposed by denudation not one case of the disease occurs.

In Spain there are orange groves which are believed to date back to the time of the Moors. At any rate they are centuries old, and the only trees affected with gum disease are those which have been allowed to become deeply embanked with earth; and the certain cure for the trouble is removal of the excess of earth and still more from beneath the crown so as to allow the free circulation of air to the roots at their junction with the trunk.

The need of air in the large roots is so peremptory that although aquatic trees are less dependent upon it than are dry land trees, yet even the former, in the case of the cypress of the Southern swamps, find it necessary to send up into the air from their submerged crown roots what are known as "knees," to supply this urgent need.

In its struggle to combat the evil effects of the abnormal condition forced upon it the tree tries to convert the buried portion of the trunk into root, sending out many adventitious rootlets therefrom in all directions; and so great are its needs for large roots near the surface that in time it will be found to have sent them straight upward from the old and outraged crown roots.

The tree thus weakened by unnatural conditions and its buried cortical armor now softened, instead of being like the true roots, enabled to resist ordinary attacks, becomes an easy prey to and hospitable habitat for its fungous enemies which find easy entrance here as though the bark had been bruised.

Although we have discovered a number of secondary causes of citrus troubles and have learned to combat them in a measure successfully, we should deliver our chief attack against the greater burdens the trees have to bear, which give to each of these minor causes the power to be the proverbial feather that breaks the camel's back. All the vegetative functions of the tree are so impaired by this crime in planting that even insect enemies find a more comfortable foothold upon it, and in one way and another it has cost and is costing the citrus growers of the state millions of dollars annually. Indeed, it should be made a technical crime since it is already an operative one.

It is the firm belief of the writer, based upon long study and observation of the subject, that were this serious handicap remedied and the soil kept properly balanced, the ordinary tillage operations of the California citrus grower would insure success so far as agricultural results are concerned.

The orange, like the lemon, is subject to two kinds of gum disease, the appearance of each of which is too familiar to everyone interested to need describing. Professor Fawcett of the California college of agriculture has discovered the exciting cause of all these excepting that of the scaly bark of the orange and has determined the specific fungus responsible in each case.

Scaly bark of the orange is also caused by a fungus, since this may be propagated under suitable conditions from the infected wood, for the trunk of the tree is permeated completely with its mycelium where the affection has been for some time visible on the surface. This disease the writer believes has up to the present been considered incurable; but a number of orange trees that were so badly affected as to be completely girdled with it and in some instances extending as high on the trunk as eight to sixteen inches, beginning at the ground, were treated two years ago with his prescription, and are now

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pronounced by a former horticultural inspector cured. His own examination reveals a most satisfactory condition. The bark now appears green and healthy and upon removal exposes healthy cambium and wood, with the sap apparently flowing normally through the treated area. Neither has the infection spread in any direction, nor has it developed at any other point.

But the most remarkable feature of the results is the fact that all these disinfected trees have held and still carry three times as much fruit as those about them, showing that some circumstance aided them in resisting the universal June drop. It would seem that the same germicidal factor that destroyed the gum fungus also disposed of the alternaria, which Professors Coit and Hodgson identified with the dropping citrus fruits. If this is true, surely we may hope that all fruit and other trees may be medicated through applications to their—possibly prepared—trunks, and in this way we may control the several blights affecting so injuriously the peach, pear, walnut and other trees.

Treatment

The writer's treatment for gum disease embodies three basic elements, namely: (1) Removal of the diseased bark down to the clear wood; (2) after superficial drying the newly exposed surface should be disinfected (Bordeaux paste is good as far as it goes, but lacks the third essential); (3) the exposed and disinfected surface should be protected against drying out with an impervious coating over it. The necessity for this protection arises from the fact tnat to enable the new bark to cover and unite with the wood beneath there must be a flow of sap in both bark and wood at the zone of juncture between them, so that they can cooperate in the renewing of the cambium layer, which cannot be done at all if the wood is allowed to dry out and the cell activities suppressed. I find it best to combine the disinfectant and the protecting coat. The bark then rapidly encroaches upon the treated area, raising the coating so that the latter is found upon the outside of the new bark, until at last the natural covering is complete and the wound beautifully healed.

The preparation giving the results described above is this: Salicylic acid, half drachm; pine tar, half ounce; shellac varnish, one quart.

This was painted over the bark after the scales had been scraped off.

I recognize some advantages in using a plastic coating, and now recommend the following: Salicyclic acid, half drachm; castor oil, two ounces; pine tar, 10 ounces; denatured alcohol, 20 fluid ounces (1¼ pints).

Dissolve the acid in the alcohol before mixing all together.

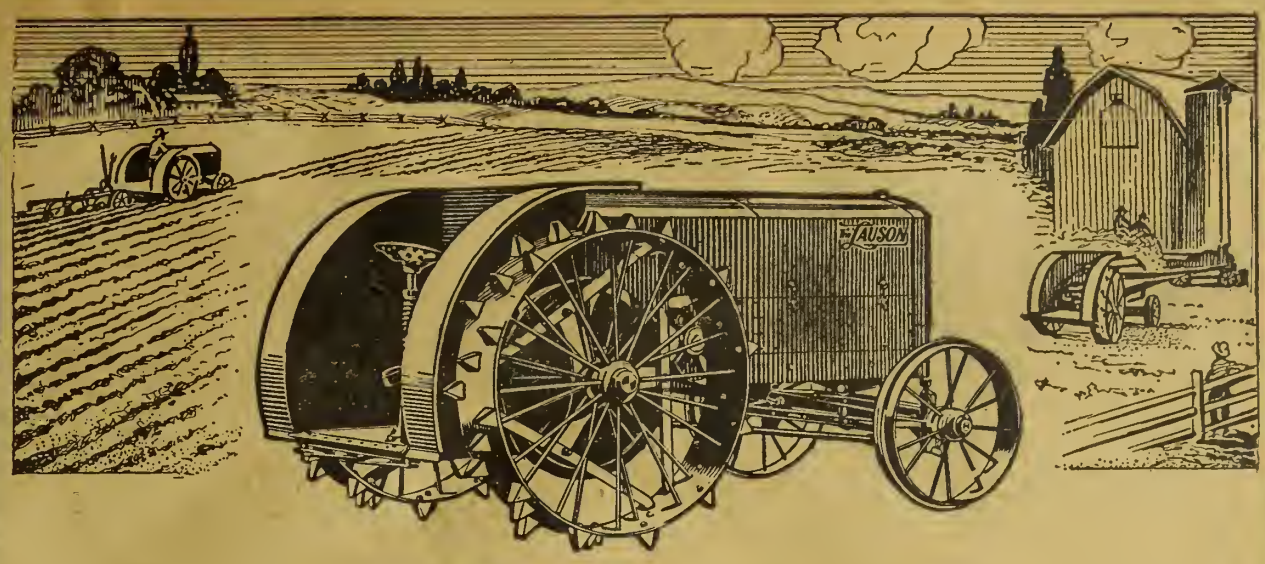
This would make a good covering for all cut or bruised surfaces in fruit trees.

THE OLIVE OIL SITUATION

The situation as regards olive oil manufacture this season as reviewed by "The Fig and Olive Journal":

Some olive plants are preparing to manufacture olive oil on rather a large scale, the present war prices for this article providing encouragement for this venture. With approximately a million gallons of olive oil, or possibly a little more than this quantity still on hand in this country, according to government reports, there is a feeling that the present prices may be maintained, at least for the coming season. However, the imminence of peace and the probable readjustments in shipping and trade which may soon follow thereafter, give rise to some uncertainty in the olive oil business. Some factors declare that the need for fats in Europe after the war will take care of all supplies that exist in the Mediterranean countries now. On the other hand, it is known that there has been a tremendous accumulation of olive oil in Spain in the past two years and we know that permission has been given producers in that country to export a considerable quantity if they can find a market willing to receive it. If the War Trade Board in this country would suddenly allow the importation of this Spanish oil there is no doubt that the present prices would promptly reflect this new situation and would likely drop just enough to "nip" the speculating packer or dealer who is buying olives and oil at present inflated prices.

Continued on Page 542



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The De Laval Dairy Supply Company stands squarely behind every Lauson Tractor delivered to a purchaser. The same prompt attention and service given to the thousands of De Laval Separator owners on the Pacific Coast may be expected and will be received by all purchasers of Lauson Tractors.

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No. Acres.....

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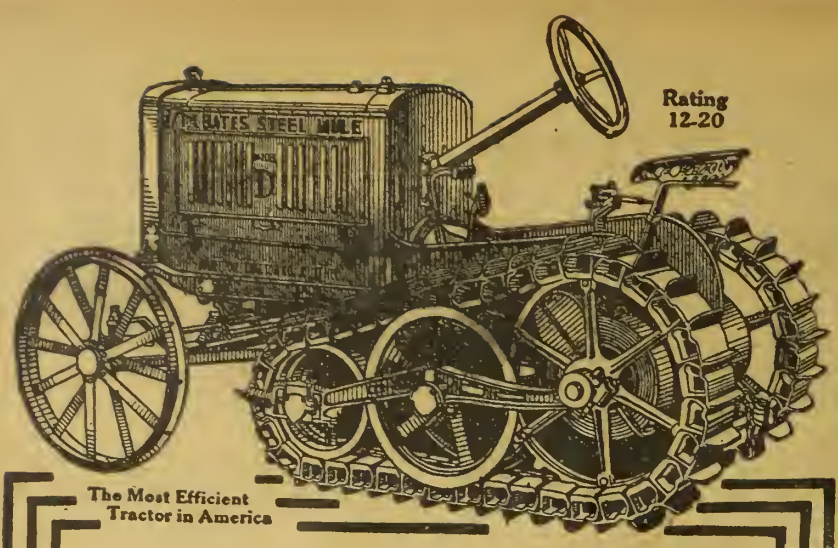

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properly applied will increase your crop production. It's your patriotic duty to do this for bumper crops are necessary in OUR COUNTRY'S program of winning the WAR.

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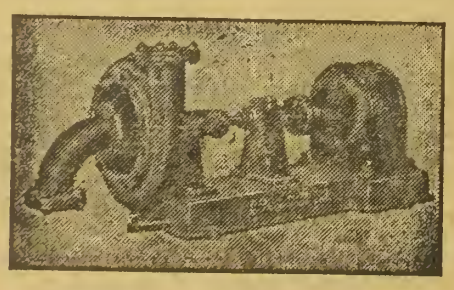

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Bulk Storage

SAFE against fire, weather, vermin and thieves, metal grain storage bins which have been in use throughout the East and Pacific Northwestern states for a number of years have gained considerable favor in parts of the San Joaquin and Sacramento Valleys for storing wheat and barley.

The bulk handling of grain which is the common method of handling wheat in every part of the United States except California, is also coming very prominently to the fore on California wheat and barley ranches, with the high cost of bags and the exceptional scarcity of farm labor.

From an economical standpoint the bulking of grain in storage bins on the farm, in warehouses, transportation in bulk on freight cars and river boats and barges, and storage in bins at terminal points and mills, has proved a most efficient system, contrasted with the wasteful expensive sacking methods in vogue in California which is particularly important at present with the prevailing high costs of labor, sacks and the necessity for conserving every grain of wheat the land will produce.

In Australia and Argentina, which are the only other places in the world besides California where grain is handled in sacks, the transition to the bulk method of handling grain is rapidly taking place under government auspices.

Here in California the most notable instance of handling grain in bulk is found on the Moreing Brothers 25,200 acre wheat ranch on Districts 1000 and 1001 of the Natomas Consolidated Company's reclamation projects north of Sacramento.

Here for two years the Moreing Brothers have harvested their grain by the conventional combined harvester method, spouting the golden harvest from specially built hoppers on the harvesters to tank wagons which were driven along side of the harvester. This wagon load of grain was then hauled to a central warehouse where it was dumped into a hopper and conveyor machinery elevated and delivered it into bins of a specially built warehouse on the Sacramento River levee. From the warehouse it was delivered by a conveyor system of moving belts and augers into barges which were floated down the river to the Sperry elevator at Vallejo, or delivered directly to the Sperry mills at Stockton. Nowhere in the course of its whole history from seed to flour was the grain touched by human hands.

The cost of handling this grain in bulk from harvester to mill according to George N. McCloud, manager of the grain department of Sperry Flour Company at Stockton, did not exceed 45 cents per ton, contrasted with a charge of between $1.90 and $2.00 per ton to handle grain in sacks from harvester to mill or elevator. The $1.45 to $1.55 difference is all represented in excess labor charges and the cost of sacks.

In the bulk method of handling grain there is almost totally eliminated the tremendous waste of this vital human food, due to loss through leaking sacks, damage through exposure to weather and sun, the spoilage and consumption by rats, mice and other vermin and loss through fire as well as the undoubted losses due to theft.

In transferring 25,000 tons of grain from the Sperry Company's warehouse at Vallejo in sacks, Mr. McCloud reported a loss of 16 tons or .00625 per cent, more than 6-10 of one per cent, contrasted with a loss of only 1,000 pounds or less than 1-10 of one per cent in handling the same quantity of grain by bulk. It might be interesting to the reader of a mathematical turn to estimate the loss of each of the five handlings from thresher to elevator or mill by bulk and contrast them with the tremendous losses that occur by the sack method. It will be apparent that the amount saved of the valuable grain by handling in bulk in addition to the excess cost of labor and sacks is another big item worth while considering. The loss is twofold in that the wasted grain is utterly gone. The farmer loses and the supply for the consumer is reduced.

Metal grain bins of varying capacities from 600 to 5450 bushels eliminate these wasteful methods and excessive handling charges in Oregon, Washington and Idaho, as well as practically all of the Central Western, Southern and Eastern states. These bins are made of galvanized iron sheets, and are easily and quickly erected by unskilled labor. Farmers who have used them in California fill them by means of small steel elevators from the wagon dump, grain delivered into the metal bin. A door, with a sack filling arrangement, is provided, and arrangements also can be made for delivering the wheat by gravity from the grain bin into tank wagons, when the time comes for transferring it from farm storage to freight car or warehouse.

Watching the Bug

OUR state and county horticultural officers are accomplishing much in protecting our crops from insect and other predators.

Quarantines are sometimes levied so as to work hardship on some, and it is very probable that occasionally mistakes are made, but without them, or similar service, we would soon be entertaining a vast and expensive host.

In an interview with C. H. Vary, in charge of the Los Angeles office of the state horticultural commission, he gave the following statement:

"During the month of October, 1918, three very important insect pests were intercepted by the quarantine inspectors of the southern division and refused admittance into California as undesirable aliens.

"Early in the month a car of potatoes arrived in Los Angeles from a town in Idaho which carried a large number of the adult forms of the Colorado potato beetle, Leptinotarsa decemlineata, on the sacks and inside the car. This beetle has a reputation for being a most destructive pest to growing potato vines in the Eastern states and also in a few small areas in the West where it has become established.

"Later in the month two cars loaded with potatoes from another point in Idaho arrived in Los Angeles and upon inspection were found to contain numerous adult forms of the alfalfa weevil, Hypera postica, crawling on the sacks of potatoes. Alfalfa weevils have thus far confined their activities to portions of the states of Idaho, Utah, Wyoming and Colorado, and their introduction into California would be disastrous to the vast acreage of our most valuable forage crop.

"These three cars and their contents were refused admittance into California and ordered out of the state after being subjected to a thorough fumigation as a precautionary measure.

"The third pest referred to is the sweet potato weevil, Cylas formicarius, which was taken in a barrel of yams from a point in southern Texas. This is a weevil pest which attacks the tubers of sweet potatoes and yams and has caused great damage to these crops in many foreign countries and our insular neighbors as well as limited areas in the Southern and Gulf states of the United States. This barrel with its contents was refused admittance into California and was immediately burned at the city incinerator by the state inspector.

"The above instances are the first recorded where these pests have been taken on shipments entering Southern California and therefore warrant the drastic measures employed by the state quarantine officers."

"Care or Cash" is the slogan which every camper in the national forests of California must remember this year. Forest rangers have made 46 arrests and secured 43 convictions under the state fire law for the months of June and July, 1918. In addition to these arrests, which were for carelessness with camp fires, four federal indictments for wilfully or maliciously setting fire to timber or undergrowth have been secured by these federal officials.

Northern California Notes

Written for California Cultivator By W. S. Guilford

WEATHER has been fine for the rice harvest during the past two weeks (preceding November 12). The crop from some fields has been harvested and shipped; that from many others will be threshed in a few days; two to three weeks more good weather will be required for others.

The bulk of the crop is going direct to the mills. The grower gives the good administration power of attorney to handle his crop. The price of No. 1 rice has been set at $4.32 per hundred. The food administration samples the rice, orders it shipped, the mills remit to the grower, the sample is sent to committee selected by the food administration and this committee fixes the price. If it is No. 1, the price is $4.32 per hundred; if a lower grade, the amount is determined.

Some crops are making as high as 70 sacks per acre—which shows a big profit—in spite of the fact that the cost of producing the crop this year will be $75 to $100 per acre as against $35 to $45 in former years.

There is big demand for rice land for next year.

One man near Willows is reported to have leased 640 acres for $20,000 a year for the next two years, and this land has already produced two crops of rice.

Stockmen are complaining of feed shortage again—there has not been enough rain to make good grass and unless rains come soon the ground will be cold and the season so late that there will be no big growth before spring.

Barley and Wheat to Follow Rice

In a number of fields in the Sacramento Valley wheat or barley will be sown in the rice stubble as soon as the rice crop is harvested.

This is on land on which rice has been planted from one to four years but which is so badly infested with water grass as to make rice growing impractical for next year.

Some of this land will be prepared for the grain by shallow plowing, then disking and harrowing. In other fields the grain will simply be sown broadcast and disked in.

Most of this land is what would be classed as second class summer fallow grain land, or pasture land. It is not the kind of land on which grain growing is anything like a safe venture. Those who are planting grain on it now believe that the crop will be just as safe a "gamble" now as it would be, after the land had been summer fallowed. Safer, perhaps, because there is ample moisture in the ground now.

Drainage conditions are better on these lands than they were before they were prepared for rice growing, and it is possible that water could be secured for an irrigation in the spring if there was insufficient rain.

It will be interesting to note results on these fields.

Seed Corn

The best crop from every crop either Indian corn or the grain sorghums, should be saved for seed.

And after the seed ears or heads are gathered considerable attention should be given to caring for them through the winter. It is easy to put this seed to one side and forget all about it and when you come to look at it in the spring find it is either mouldy or that the mice have damaged it badly.

One good way to handle it is to string it on a wire and hang it up from a roof or ceiling, but even then it should be looked after.

More Bees

"The sugar regulations do not bother us any," said a friend recently. "We have a few bees and use honey for almost everything we once used sugar for, and beside that some of the bees made as much as $20 a stand, at the present price of honey. You would be surprised how many ways honey can be used in preserving fruits and cooking."

And almost any farmer could keep bees the way this man does—just a few stands in the garden.

Growing the Velvet Bean

By T. J. Walker, San Fernando Valley

SOME three years ago, realizing the necessity of growing cover crops in citrus groves for their value as green manures, on account of the rising prices of commercial fertilizers, the scarcity of manure and for the purpose of keeping down temperatures during the hot days of June and July, I imported some velvet beans; planted them on land newly cleaned of sage brush and cactus, very poor sandy soil, so poor, in fact, that it would not clothe itself with verdure, to any extent, during the rainy season.

My first year's experiment was, in a way, disappointing as the seed did not germinate very well and resulted in a very poor stand, and the growth of the plant itself did not come up to expectations.

The second year I took some of the same seed and planted it on better soil, first getting the soil into the best of condition and inoculating the seed before planting. The results were more than I had looked for.

In May of this year I took the seed saved from last year's crop, inoculated, and planted in a year old orange and lemon grove, using 20 pounds of seed to the acre, planting 14 inches apart in the rows and the rows three feet apart; four rows to each row of trees which was 20 by 20, leaving a space of about five feet between the beans and the trees. This space would have been completely covered by the 4th of July had I not put the vines towards the centers. Some of the plants made a growth of 42 feet from May 15 to October 20.

As a summer growing annual legume, as a soil-improving crop, both for new and old soils that have become somewhat exhausted, as a leguminous crop for adding at a minimum cost large quantities of vegetable matter to the soil, thus making it more porous, and more retentive to moisture, the nodules on the roots collect a large amount of nitrogen from the air, the value of the seed which yielded 21 bushels to the acre, the yield of dry hay being 2940 pounds to the acre, the green weight of the vines being 17,400 pounds to the acre, and as a crop for the purpose of smothering out Bermuda grass there is nothing better.

Quoting from Farmers Bulletin 962 of the United States department of agriculture, which says, "Velvet beans are the most vigorous growing annual legumes cultivated in the United States, the vines often reaching a length of more than 50 feet."

Velvet beans produce two distinct types of pods, one being covered with a dense black velvety pubescence and in other types the pubescence consists mostly of white or grayish hairs. The pods vary from three to five inches in length. The tap root is not very long but produces a lot of lateral or surface roots running as much as six feet in length, which are abundantly supplied with nodules. The plant matures in 150 days in the San Fernando Valley.

Land was irrigated and cultivated at the time of planting, again in 30, 60, and 90 days, after that time it was impossible to do any more cultivating between the plants on account of the rows being completely matted together and from two to three and one-half feet high.

What the bean has done for the South in the way of a soil builder, as a forage crop for hogs and cattle in connection with corn, is well established. I see no reason why it will not do for California as a summer cover crop for our citrus groves and be as freely planted as the clovers and vetches are for a winter cover crop, and, in addition, produce large quantities of feed for stock, as silage, hay and green manure.

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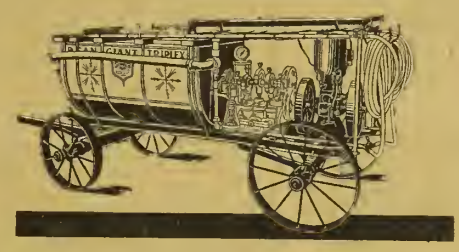

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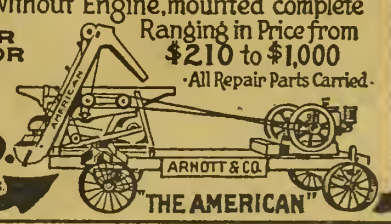

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Gardening in Clay

Written for California Cultivator by Ernest Braunton

A RANCHER in the south end of the state told me that in studying California while living in Illinois he had gained the impression that before the settlement of Southern California it was all a desert and therefore either sand or gravel or at least light soils largely of such composition. Now he owns 40 acres that contains, to let him tell it, "the heaviest soil in North America." He says no flower gardening is possible and nothing has yet drawn any of the "mucilage" out of the soil or in any wise modified its original state of stickiness.

This soil is adobe, which for the present we will consider merely as black clay, which it really is. I have seen a splendid crop of chrysanthemums grown on black adobe without any attempt at cultivation. The surface was covered with three inches of coarse stable manure and the watering was done by setting lawn sprinklers over the area. After the 'mums were gone it was found they had fed on the "mucilage" in the soil and thenceforth this part of the garden was never sticky or hard to till when either wet or dry. Of course 'mums require much water and care little for drainage, but all clay soils need to be drained for best results in general garden crops of either flowers, vegetables or fruits. Heavy, close soils are cold and wet in winter just at the season when we would garden most intensively.

Deep cultivation is one of the best remedies for close heavy soil. The weathering or exposure to the air and sun has a decidedly ameliorating influence on clay. But clay soils are not much benefited, permanently, unless soil stirring goes hand in hand with the introduction of material that will hold the soil particles apart or prevent its return to a doughy state. I have experimented with adobe and found best success to come from the incorporation of a mixture of equal parts of leaf mold and sharp sand, the two to be well mixed before digging into the soil. Its effect was decidedly better than equal parts of sand and good rich stable manure which was tried on the opposite end of the same strip of soil. Between these two plats one-half was given sand only and the other half manure only. A separate bed, close by, was given nothing but leaf mold, and this bed proved next best after the leaf mold and sand plat. Where sand only was applied it had settled, all of it, down to where soil stirring had stopped, and there it lay, every grain of it, at the end of three years. The soil had been only temporarily benefited by the sand passing through, "going down." Aside from the sand settling, by reason of greater weight, when the soil was stirred or wetted by rains, I believe that the vibration of the earth will allow the sharp edged heavy grains to cut their way down to earth so solid that further penetration is practically impossible. I have not tried green manure crops to loosen clay but am sure such crops would be of great benefit.

Nearly all bulbs do well in heavy soils. I have never seen such fine lily of the valley in any light soil as those grown in adobe. Daffodils are also fine in the same medium; especially were the poets or pheasant's eye large and of waxy texture. Peonies also thrive in heavy clay for it is generally cool in all kinds of weather. Hybrid perpetual roses are the only class that thrive in very heavy soil and even these should have holes dug for them not less than three feet deep and one foot of stable manure placed in the bottom of each hole.

Fighting Nature

One of the reasons why many lose interest in gardening after a brief and inglorious experience is that they expect too much and attempt too much. No garden will grow all sorts of plants successfully. Some plants require very light soil and superb drainage; a few thrive best in very heavy soil; others should have a rich soil very retentive of moisture and of a loose friable texture. Few gardens, even of acres in extent, have all these soils. He who fights nature will work hard and feed plants constantly and heavily. He who would garden cheaply must seek the lines of least resistance. Grow only those plants known to do well in soil such as yours and in your section of the state. It is far better to grow a fine lot of ordinary plants than a sickly lot of the rarest on earth. Health and vigor are of greatest importance in either plants or animals.

Amelioration of Soil Conditions

Very, very often I have asked myself this question: Will a single application of anything known to man work a permanent change in soil? From a chemical standpoint a change is possible but from a practical point of view no change can be permanent unless that which worked the change is constantly applied to the soil, or at least some agency that will contribute toward soil amelioration in the same direction. After having run one ton of soil through a quarter inch mesh sieve after it had been mixed with half the quantity of leaf mold and a far lesser amount of well decayed stable manure, every vestige and trace of the introduced matter was extracted in two years by palm oots and the soil was then harder and poorer than it had been for the 12 years that I had annually worked it. For years I have tried such experiments with many plants in various soils and though palm roots are the worst robbers encountered, almost any crop will quickly rob a soil of all humus and plant food. I am well aware that at Rothhamstead soils manured each year for twenty years, and then remaining unfertilized still produced a larger crop for fourteen years than they had borne before the manuring began thirty-four years previously. But the fact remains that in fourteen years the soil had returned to its original state of unproductiveness. This teaches us that constant feeding is the price of success, no matter what sort of vegetation we are growing. The exception is in the case of trees and shrubs planted on better soil than that wherein they naturally grow. But where crops are removed annually or biennially, constant feeding is most necessary.

Blame the Soil

Every year I get scores of letters stating: "Very few plants do well in my garden. The soil is —." Very few of these come from rural residents. More than nine-tenths come from garden owners in cities and towns. The fault lies, not in the soil, but in the owner thereof. We must learn that soil must be worked. Physical condition is of vastly greater importance than the food contents. Soil ever so rich may be in such poor physical condition that the food is unavailable to plants. And any ordinary soil, if in splendid condition, will produce good garden vegetation if proper irrigation and cultivation is given. Stir the soil deeply and pulverize finely and success will be yours.

Propagation by Slips or Cuttings

There is no mystery about the propagation of ordinary plants from cuttings. No sleight of hand is needed. I am a professional propagator. I have stood in a commercial propagating house for months, doing nothing but making cuttings and inserting them in the sand. While temperature is an important factor in house propagation, in multiplication of hardy plants by cuttings success lies in keeping an equable moisture. Never dry and never saturated is the normal sought for. Keep your sand or soil moist at all times but never allow water to flood or stagnate. This is the most important factor, not only in propagation but in growing also.

Christmas Berries

Recently I saw a mass of shrubbery composed of cotoneasters, crataegus, and pyracanthas, all in full bearing, laden with red or orange berries. I could not but notice how superior they were to our native Christmas berries or toyon. Some of the shrubs were so weighted down with the crop that the lower branches lay on the ground. I do not know of any species of holly or bearberry that fruits so heavily. Both holly berries and holly leaves are, of course, much finer, for what is there in all the world that can compare with the European holly? But all the shrubs named are very good both in foliage and fruit. The heaviest cropper of all, a splendid shrub, is cotoneaster pannosa.

Escallonias

I know a fence whereon the escallonias grow, an old picket fence seven hundred feet long. The shrubs are tied to the pickets and rear their heads eight feet in the air. As a mask for fences, low buildings, and other unsightly objects they are very good. Escallonias are clean, of good foliage and bloom, are hardy, vigorous and in all ways desirable as garden shrubs for general use. I never knew one to die, nor did I ever see a sick one. They are natives of South America.

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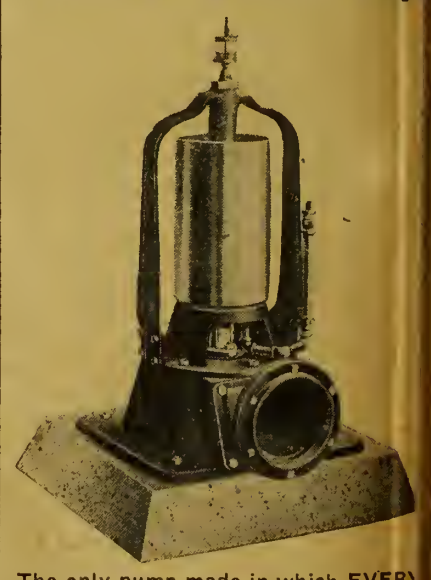

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Wanted, A Better Livestock Market

PICK out, at random, one hundred live stock producers in this state and ask them what, in their opinion, is the greatest live stock need and the chances are very good that 80 or 90 out of the hundred would say that the greatest need from the standpoint of the producer is a more satisfactory plan for marketing live stock.

That view on the part of the producer is so universal that we are led to ask the question; "What are you going to do about it?" We put it up to the producer for the reason that it will require concerted action on the part of the producers to hring ahout a change, and all the producers of this state working toward that end can have any kind of a market they want.

We suppose that the majority of live stock men, who have given the subject of markets any thought, hold the opinion that a stock yards at our large killing points would come nearer solving the prohlem than any other plan. On the other hand, there are many producers who hold that any possible advantage to be derived from the establishment of a stock yards would be more than offset by the many evils that such a system is known to develope.

The whole question of markets is so fundamental to the future development of the industry in this state that it would seem highly important that the producers should begin to give serious thought to the prohlem.

The weak points in our present system in this state are; first, lack of competition from buyers; second, the fact that Coast markets are not, except in a meager way, based on grades of quality and finish. The principal criticism of the stock yard plan of selling is the evident packer control.

There are four ways open to producers of this state. First, California producers can build and control their own yards; second, build and control their own yards, killing plant and distribution; third, permit the packing interests to build and operate their own yards under government or state regulation; fourth, retain our present system, which is unthinkahle.

The fact that by far the majority of the cattle, hogs and sheep that are slaughtered, reach the killer through the union stock yards of this country would seem to indicate that, in a basic way, that plan of marketing is the most satisfactory. On the other hand, the fact that investigations, and common knowledge, prove that the different yards are either owned or controlled by the packing interests, and that this control is surely used other than to the advantage of the killing interests, would lead to the conclusion that the kind of market the producers of this state should fight for would be one embracing the good points of the established system without the buying interests in control.

That such a market can be established goes without saying—but it will never become a fact until the men who are seeking a satisfactory market get together in a big way and work to that end.

Before any movement along this line will make headway it will be necessary to recognize a few definite principles.

It will be necessary to recognize the fact that the packer is a necessary "adjunct" to the business. That he operates along certain established business principles and unless conditions are such that he can make a profit through his plant he will not operate. This is suggested because certain producers will want to eliminate the packer or will expect that he operate under conditions that will place the Coast market on the same basis as Chicago. There are several very good reasons why California markets for live stock will probably never he quite the equal of Chicago. Chicago is the center of the live stock and meat industries, and the packing establishments located there are not only the largest, but, hecause of the volume of business handled, they operate with a lower overhead than is possihle in smaller plants. In other words, because of their efficient methods and low overhead they can hang up a carcass for less money and can therefore undersell the smaller plant. It has been suggested by some that Coast packers should pay Chicago prices plus the freight, arguing that if we had no markets here Coast buyers would have to pay the freight. The unfairness of that argument is obvious. Coast packers can not he expected to fill their coolers and cellars with meat laid in at a cost that hars them from competing on the open markets of the world—they must have an outlet, else they can not buy. On the other hand producers should demand that they receive every penny that is coming to them. There is no sentiment ahout the packer and there should be none exhibited by the producer.

If a producers-owned yard was established it would be necessary to have a working agreement with the packers that they would come to the yards to buy.

Those opposed to any kind of a yard selling system hold that even with a yard owned by the producers, competition among buyers does not necessarily follow; that the packers have an effective cluh to use in the establishment of prices; namely, a working understanding among themselves as to the scale of prices. That such practices exist is charged by practically every live stock organization in the country and by numerous investigating commissions.

But a point in favor of the producers of this state is, that as yet the big packing interests do not so completely dominate the business as is possible in the Middle West—there being several large independent concerns in the game.

The possibility of the producers establishing cooperatively owned and operated yards, killing plants and distrihuting organizations is an alluring plan, the realization of which appears to he rather distant, notwithstanding the fact that such a plan is in successful operation in certain parts of the world.

To blindly accept a packer owned yard, knowing the evils that exist in other markets operated under such ownership, would constitute an unconditional surrender and the absolute delivery of the live stock interests of this state into hands that give no quarter.

In this connection, it is possihle that out of the control of the packing interests and the stock yards maintained by the food administration during the war and continuing now, will he evolved a satisfactory plan for regulating the meat industry.

To retain our present crude, cumbersome and unsatisfactory system of marketing our live stock will continue to hold back the logical develoepement of the live stock industry of California.

Today, California is the only large producing section that does not have the advantage of even an apparent open market. At South San Francisco and Los Angeles, as well as several interior points, are located one or more killing branches of the large Eastern firms together with a number of local plants varying in capacity from only a few head to considerahle numbers. Each of these plants have their own yard and their plan of huying is ahout as follows: A producer or shipper having a carload or more of cattle or hogs, may or may not write or wire one or more of the killers as to prices. His car is billed direct to the killer offering him the best price. On arrival the shipment is unloaded, and without being given a "fill" is run over the packer's scales, who previously, may or may not have sorted or graded the shipment.

It was stated above that Coast prices may never equal Chicago quotations, but the producer is entitled to much narrower margins than he gets at present. On the face of quoted prices, it would appear that the margin is wide enough, but when it is remembered that the Eastern prices are for animals after they are fed and watered, thus affording the shipper an opportunity to recover part of the

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Outstanding specimens of the Percheron and Belgian hreeds, stallions, mares, and fillies. The sort that will make money in the new era that is already here for draft horses.

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Include a most desirable lot of proven brood mares of great suhstance and quality, and substantial weights. Most of the mares bred to outstanding registered stallions.

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The implement offering is of extraordinary character. Only the most modern equipment and implements of the very hest makes have ever found a place at Tagus Ranch and nearly everything in this sale is of comparatively recent purchase, and everything is in first class condition. Beet, bean, and alfalfa implements will be found in great variety, offering a selection not found short of the larger dealer's floors.

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All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

Segis Pontiac De Kol Dutch
Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. E. E. Freeman, Rt. B, Modesto

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Registered Holsteins of best breeding. Young bulls for sale.
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When you buy why not buy the best? We have it in Stanislaus.

Thompson's Registered Holsteins
Young bull calves for sale with yearly record backing.
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Our Senior Herd Sire is KING KORNDYKE HENGERVELD ORMSBY 7th
Five of his sisters sold at public auction for $23,800, an average of $4760.
This blood has made some of the world's greatest producers.
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Young bulls for sale. No females.
REGISTERED BERKSHIRE BOARS, sons of the $1500 boar Star Leader, for sale.
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Forty-three of our litters this year averaged ten to the litter. We sell foundation sows and boars to head your herd from our easy keeping, heavy producing strains. Write to

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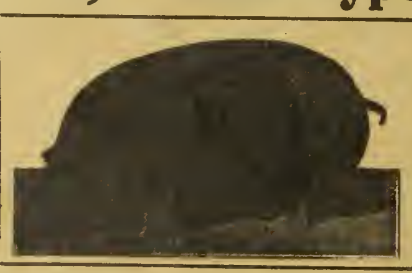

M. Bassett
Hanford, Kings County, Cal.

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heavy shrink incident to shipping, and that Coast prices are, (unless the stuff was contracted at home-weights, and little stock is bought that way) for animals "unloaded off cars and without feed and water" the margin becomes even wider.

Speaking of "fills," the fact should not be lost sight of that the "fills" are made on feed furnished by the stock yard company, and that the prices charged for feed in most yards constitute the grossest kind of profiteering.

A few years ago the necessity for grading hogs, cattle and sheep on Coast markets was not especially important, for the reason that the quality of live stock reaching the markets was inferior and could handily drop into one or two grades at best. During the past few years there has been a marked improvement and the quality of stuff is improving rapidly — would doubtless improve faster, if the markets justified it.

The large operator is not so much concerned with our present marketing system for the reason that, because of the volume of his business, he can go to the packer and drive a satisfactory bargain or he can ship East. The small producer, especially the hog grower, is in no position to do either. With a view of helping the small producer, the farm adviser of Kern County worked out a plan under which the small producers could assemble their hogs or cattle at a central point, have them sorted and graded by a competent committee, and buyers representing the packers invited to bid on the offerings. The plan has proven very satisfactory and has been adopted in a number of counties. Under existing conditions such a plan probably affords the greatest help in marketing live stock, but it is hardly probable that such a plan can be extended to the marketing of all live stock.

Notwithstanding the fact that these hog auctions have usually resulted in the consignors receiving the top price for their stuff, the plan hides a gentleman of color, and on several occasions he has been discovered when the shipment was assembled and no buyers, or only one, put in an appearance.

Practically every plan for marketing is open to objections. The problem seems to be to work out a system that has the fewest "holes in it."

Now that peace looms near, and with the future "all ahead," isn't it about time all interests, producers and buyers, get together in an effort to work out a sane, constructive plan that will meet our conditions?

To imagine that the producers of this state will continue to register satisfaction over the existing plan for selling live stock is a folly beside which the wildest dreams of Don Quixote would be profound facts.

CAUSE OF DIFFICULT CHURNING

As soon as the cool weather arrives and pastures are supplemented with dry feed, complaints of difficulty in churning begin to arrive at the University of Missouri college of agriculture. C. H. Eckles of the dairy department says this trouble usually is experienced when only one to two cows are used and these are strippers. The slowness of churning results from a combination of the hard fat and the large amount of curd found in the milk of stripper cows. The trouble has no connection, contrary to what is often thought, with failure to supply salt nor is it the result of using any particular feed or combination of feeds. Sometimes the trouble comes from too thin cream or attempting to churn at a too low temperature.

The first thing is to make sure the temperature is right and the only way to be sure is to use a thermometer. During the winter season 65 to 70 degrees is generally about right for churning such cream and no advantage results from having it warmer. However, having the temperature and thickness of the cream right will not always remedy the trouble. In some bad cases there is no practical remedy, especially when the milk comes from one cow. A cow producing milk giving this trouble had best be dried up as soon as she has been in milk ten months or more. Adding cream from a fresh cow will generally cause the cream from both to churn if the temperature is right and the cream is not too thin.

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We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

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Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.
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Live Stock News Notes

Poland China Boar $5500

In the A. D. Severe Poland China sale, The Chancellor, a yearling son of Severe's Big Timm, was purchased by Yotter Brothers and J. A. Duncan, Oakville, Iowa, for $5500.

To Help Restock Belgium

A number of Eastern breeders of Belgian horses propose to assemble a collection of stallions and mares to be donated to the people of Belgium as an aid in restocking their devastated country.

1918 Wool Crop

The wool production estimate of the bureau of crop estimates makes the clip of 1918 amount to 257,921,000 pounds in the grease. Pulled wool is not included. The clip of 1917, revised estimate, was 241,892,000 pounds.

40 Shorthorns, $43,375

In the first sale of Shorthorns held by Jess C. Andrew, Westpoint, Indiana, 40 head sold for $43,375, an average of $1155. The bull, Lord Avondale, regarded by many as perhaps the greatest son of Avondale, was responsible for the keen demand accorded the offering.

Heavy Run of Hogs

One explanation as to why the food administration failed to stabilize the price of hogs in October was that receipts at the principal markets were so heavy that the killers could not handle the run.

A report just issued by the United States department of agriculture, bureau of markets, shows that during the month of October 44 markets received 3,190,927 hogs compared to 2,542,303 in October, 1917.

Gatton to Manage New Duroc Herd

Walter Gatton, superintendent of the swine department of the Liberty Fair, writes that he has accepted an offer from the Diamond Bar Ranch, Spadra, to take charge of their hog department.

Mr. Gatton states that the owners of the Diamond Bar Ranch propose to establish one of the leading herds of Duroc-Jersey hogs in the West. Their plans also include establishing herds of pure bred Shorthorn and Hereford cattle.

Harris Herefords for the Coast

Clifford B. Harris, Western representative of the noted Hereford breeding firm of O. Harris & Sons, Harris, Missouri, is now in the East for the purpose of selecting between 75 and 100 head of cows that are to be used in the establishment of a herd this firm will maintain near Hayward.

The Harris name is inseparably associated with superior Herefords and for a great many years the Gay Lads and Repeaters bearing the Harris colors in the leading show rings of this country have been responsible for many of the most brilliant pages of Hereford history.

Jeffries' Holsteins in 30 Pound Class

James J. Jeffries, Burbank, is the latest California Holstein breeder to break into the 30 pound class. Herdsman Ted Cameron recently had eight of the cows in the Jeffries herd on official test and has made some excellent records, including two above 30 pounds butter in seven days. The senior three year old Piebe Canary Belle De Kol made 30.61 pounds butter in seven days, 108.82 pounds in 30 days; Novelty Pauline 2nd, with a previous record of 29.57, came through this time with 30.94 pounds butter in seven days, and 128 pounds in 30 days from 2766 pounds milk. The balance made the following butter records in seven days: Queen Fanny Segis, 22.03; Gerben De Kol of Maple Lane 2nd, 20.96; Mabel of St. Lawrence 3d, 20.66; Esther Netherland Mercedes, 20.24; Segis Spring Farm Korndyke Lass, a junior four, 18.05; Maid Tuebie Segis, a junior four, 14.54. This is an unusually good showing for the first lot tested in a herd, and is further evidence of the excellent quality of foundation cattle purchased by Mr. Jeffries. All of these cows dropped calves by the great young Jeffries herd sire, King Segis Pontiac Jannek. It is to be regretted that Ted Cameron could not stay and continue his test work, but he has felt the urge of the times and has enlisted for military service, possibly has already gone by the time this item gets to print.

Humphrey Buys Grandson of Epochal

W. S. Guilford of the Butte City Ranch, Glenn County, informs us that A. B. Humphrey, Escalon, who developed the famous boar Grand Leader 2nd, grand champion at the P. P. I. E., has purchased from the above establishment a grandson of the celebrated English boar, Epochal. The Humphrey boar is out of the sow Escalon Fashion Princess, that topped the Berkshire Congress Sale at Davis in 1917.

How About It?

Bridgford Company, Knightsen, recently made an official record that is probably a state record at least. One of the daughters of their senior herd sire, King Segis Alcartra Abbekerk, was bred by accident at about eight months of age. She freshened at 17 months in thin condition, and was put on official test, as some other cows were being run at the time, and she made the surprising record of 16.12 pounds butter in seven days, milking as high as 48 pounds per day. If this record is an indication of what the daughters of this bull are going to do it promises well when the two year olds begin to freshen.

Carruthers Receives Eastern Offer

The Sacramento Bee states that W. M. Carruthers, Live Oak, has received an offer for his Shorthorn bull, Count Glory, from Carpenter & Ross, Mansfield, Ohio.

Carpenter & Ross own one of the great herds of Shorthorn cattle in America, and it was in their herd that Avondale, perhaps the greatest breeding son of the noted Whitehall Sultan, was developed.

After the death of Avondale, Peter Ross selected Maxwalton Revolution, a son of Avondale, to head their herd. This bull was shown successfully at many of the Eastern fairs, and his untimely death at the Virginia state fair, a few weeks ago, caused them to make Carruthers the reported offer.

Mr. Carruthers has refused all offers for Count Glory.

University Stock to Chicago

The whole live stock fraternity of the West will be interested in the fact that the University of California will again make an exhibit at the International Live Stock Show, Chicago, November 30-December 7.

Two years ago the exhibit made by the California institution swept the boards at the great Chicago show and hung up a record that they are still talking about back there. It will be recalled that university steers, California Favorite and California Jock were declared grand champion and reserve grand champion steers, respectively, and that the wethers also made an excellent showing.

This year the exhibit will be more extensive, and will consist of five or six steers; a pen of Poland-China, Berkshire and Duroc barrows, as well as a carload of Duroc barrows; and the usual showing of wethers—Southdowns, Shropshire, Hampshire and cross-breds.

It is never safe to prophecy what will happen, but it is not too much to expect that the live stock to be shown this year will be a credit to the state.

The senior yearling Shorthorn steer, California Marvel, is regarded as one of the rarest types of Shorthorns ever in an American show ring, and his stall mate, a blue-grey junior calf is conceded by competent judges to be one of the thickest, most attractive calves ever out.

Two years ago it was conclusively demonstrated that California could produce satisfactory cattle and sheep —this year it is confidently expected that the university showing will demonstrate the fact that this state can produce hogs quite the equal of the best corn fed products.

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The following are popular sizes and will be sent upon receipt of your check or money order:

Size	Depth	Length	Price
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14 inch	7 3/16 inch	60 inch	..... 6.55

Other models from 24 to 120 inches in length from $2.50 up. Order now.

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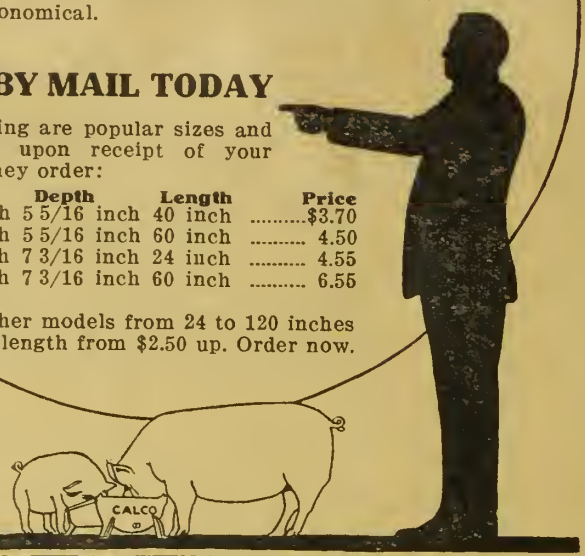

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GIVES GREATEST VALUE FOR LEAST MONEY
IT MAKES THEM FAT

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fed regularly to sheep will keep them free from worms. It also acts as a tonic, a laxative, a blood purifier and as an aid to digestion cannot be improved upon. Will eliminate BLOAT and ALL AILMENTS COMMON TO SHEEP.

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Everything sold is guaranteed as represented.
Why send East for breeding stock when we can supply your needs?
Save time and money by writing us for particulars.

Cottrell & Packard, Tempe, Arizona

Members Pacific Coast Hereford Breeders Association

The Largest Herd of Herefords

Among the beef cattle attractions at the forthcoming Liberty fair, to open at Exposition Park, Los Angeles, Thursday, November 21, is the exhibit of Hereford cattle owned by the Hereford Corporation of Wyoming.

This firm owns the largest herd of registered Hereford cattle in the world and few herds have a longer or more interesting record.

Since the herd was established in the early eighties by select importations of English females, the influence that the herd has exerted on cattle throughout the West would be impossible to estimate.

The breeding herd has been increased to large proportions through a policy of retaining the choicest cows. And because no outside females have ever been added, the herd represents a uniformity of bloodlines that has made possible the early recognition of valuable bulls and the consequent wider use of such bulls. Only the strongest bred Anxiety bulls have been used and to recount them all would require more space than is available.

The show herd has been sent West to acquaint cattlemen of the Pacific Coast with the character of cattle produced in this herd and the representatives of the firm are anxious to meet the live stock men of this section.

DECEMBER HOG PRICES

The food administration announces that after consultation with the subcommittee, agricultural advisory board, and the special swine producers' representatives and with the packers it has been arranged that the November price basis for hogs shall continue through December. It is highly desirable that the lighter weight hogs be held back for the next thirty days. If withheld at this time the possibility of breaking down present price levels because of excessive receipts of the lighter hogs will be averted. All available hog products that can be spared will be required for foreign shipment in December and January and thereafter.

The November price referred to is $17.50 per cwt. at Chicago.

In view of the existing agreement between the Coast packers and the food administration for California whereby the Coast packers agree to pay not less than one cent under the food administration minimum effective on the Chicago market, the above announcement is of interest to California pork producers.

MORRIS HOLSTEINS AVERAGE $292

The sale of Holsteins held by A. W. Morris & Sons, at their farm near Woodland, November 12, resulted in an average of $292 for 97 head. Seventy-six cows averaged $315, and 21 bulls, mostly youngsters, averaged $201. The top price of the sale, $850, was paid for Miss Gelsche Walker Korndyke with a record of 23.17 pounds butter in seven days. She was purchased by Leeman and Kilgore of Sacramento, who also secured Pet Salambo of Riverside for $560. Other prominent sales were: Pauline Creamelle Mercedes, a 30 pound cow, to H. De Wolfe, Ripon, for $710; Leda Gerben Alcartra 2nd, with a record of 29.87 pounds butter, to Frank Helm, Fresno, for $550; Hartog Creamelle De Kol, with a record of 29.61 pounds butter, to Dr. E. J. Weldon, Sacramento, for $600.

Other buyers at the sale were as follows:

Kinkaad Livestock Company, Fallon, Nev.; A. Saalfield of Modesto, James McKindley of Acampo, S. J. Dado of Petaluma, Jones Brothers of Woodland, F. E. Knight of Vallejo, B. McGowan of San Francisco, Syl Lauson of Woodland, W. L. Hoges of El Centro, L. W. Archambeau of Sebastopol, D. L. Hoffman of Grand Island, G. A. Gabonini of Petaluma, A. Gaul of Stockton, Frank B. Anderson of Sacramento, W. L. Brown of Woodland, Linggi and Leinert of Clarksburg, Joe Rose of Gridley, F. A. Faisst of Franklin, A. R. Strother of Acampo, C. Robinson of Woodland, George P. Robinson of Woodland, Herbert Coil of Woodland and A. M. Robinson of Davis.

The sale was managed by C. L. Hughes of the California Sales and Pedigree Company. Cols. Ben A. Rhoades and Cy N. Clark officiated in the box.

The JERSEY

If you just want to "keep a cow" any cow will do. But if you want thrifty cows that will conserve feed; that will show real profit every day of the year, you must have Jerseys. They can advertise other breeds as they may, but they can't compare them to Jerseys on money making merit. Let us give you the facts, free, and then write to Breeders for prices and pedigrees.

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ALL MY RECORDS
are made under ordinary dairy conditions. The farmers cow is
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YOUNG BULLS FOR SALE
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One at the head of your herd will pay big dividends on his cost. Write to
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Get One of My Jersey Bulls
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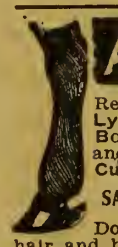

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California's Most Popular Big Type Sire
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STOCK YARDS VS. AUCTIONS

By Donald Graham

Off hand, many people would say that we need a union stock yard to handle the live stock marketed in this state. At one time this seemed the most satisfactory plan to me, as it would assemble the stock received at large centers, in one place where it would be on a competitive market. For me, it would be as satisfactory as any other means of marketing, I believe, though I would have to pay certain yardage charges. I feel that one should be able to put his live stock before a number of buyers, where the quality could be easily judged. The man who produces the good stock is going to profit by such marketing, for the reason that buyers will endeavor to take the best stock and will be willing to pay for it. The good feeder will benefit by receiving an advanced price, over what he receives today, when he writes or phones a packer that he has so many head of hogs or cattle or sheep, of such a weight, and such a quality. The packer may or may not put a price on his offering until he sees it. I find this very unsatisfactory.

Today, I would say that probably the better way of marketing live stock is the plan followed in Kern, Tulare and other counties, under which the producers market through the county farm bureau. In the above counties the small farmer is encouraged to keep live stock to fatten for market. The small producers, if there are enough of them, might easily produce and market more live stock each year than the large operators. These small producers can easily market through the county farm bureau auction sales, whereas they could not well compete on any of the open markets of, say, Los Angeles, for the reason that it would be difficult for them to get their stock to market.

I feel certain that the live stock auctions, as conducted in many of the counties of the state will prove the most good to the most producers.

COOPERATIVE SHIPPING STIMULATES HOG PRODUCTION IN UTAH

Hog production in Utah has received a big boost in recent months because the small farmers, especially those removed some distance from railroad facilities, have been able to get their hogs to market at greatly reduced expense through cooperative shipping. More than 100 farmers have shipped 18 carloads of hogs to the North Salt Lake stock yards during the past three months. The hogs consigned in these shipments came from sections 35 to 90 miles from a railroad shipping point, and in some instances were brought in wagons by the growers to a central point where auto trucks were used to transport them to the shipping point. Some were shipped by local freight to a central point where carloads were assembled. Each lot of hogs was marked by clipping the hair, and when they reached the destination each lot was yarded, fed and sold separately. The expense of shipping was pro-rated, and each owner received his individual check. The cooperative marketing plan has resulted in increased shipments and a marked improvement in the quality of the offerings.

GIVE HOGS RUN OF PLACE

Where a farm is fenced in such a way that hogs, and sometimes sheep and cattle, can be given the "run of the place," a big saving in feed can be made.

Volunteer grains, winter growing grasses, burr clover and many weeds furnish good feed, that is nutritious and valuable because of the variety afforded.

We plan to run between 250 and 300 head of pure bred hogs in our orchard all winter.

The hogs will be turned in just as soon as the intercrop of corn is harvested, and they will get all the waste fruit, the down-corn and grass.

The hogs never do so well as during the period when they have lots of exercise and a great variety of feed.

Shelters are provided, and some corn is fed every night, just to "keep them coming up" and to prevent them getting too wild. We find, however, that with quiet sows, that are used to being handled, the pigs grow up with no fear, and four or five months of range will not make them wild.

In fact, it is a matter of frequent comment by visitors that the hogs are "friendly." In walking through the orchard it is not an uncommon occurrence for a hog to come up—making the friendly grunt, that friendly hogs do—to be scratched. It is much easier to handle hogs when raised under such methods than when they are "snorty" and wild, and well repays the little extra time required to bring it about.—W. S. G.

CULL OUT THE UNNECESSARY HORSES

The maintenance of unnecessary horses on the farm is a costly practice at any time. It is doubly so now, because of the high prices of feeds. On the average farm, horses and mules work an average of less than five hours a day throughout the year. Any other income they can create will reduce the cost of operations. There are two main methods of increasing the revenue from horses and mules, says E. A. Trowbridge of the University of Missouri college of agriculture. First, brood mares raising colts besides farm work. If the mares are of the right kind they are a valuable asset. Second, much farm work can be done with young horses and mules that have not yet reached the age at which they are most valuable. Such animals as these can well be used for farm work.

Horses, other than brood mares which are producing colts, and horses and mules which are not increasing in value, should be considered seriously as property for sale. It is possible to overstock a farm with horses. The equipment should be studied carefully to see that this is not done. By no means, however, should farm horse stock be so depleted as to cripple farming operations. Good strong horses and mules are essential for maximum production.

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50 Berkshire Suckling Pigs eligible to registry, sired by Iowana Rival Majestic 194736, son of Rival's Champion 112500, and sons of Iowana Rival Majestic, at $12.50 weaned.
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Sired by Ames Rival.

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All stock guaranteed as represented. Write for terms and particulars. We offer for immediate delivery, 200 two year old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.
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Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Storing Sweet Potatoes

Cold storage, that is in warehouse where a low temperature is maintained by use of refrigerator, is best. The next best method is to place potatoes in thin layer on tray in a cool dry place allowing air to pass freely over them. Again some keep potatoes in dry sand. Another method is to dig potatoes, throw them in piles, cover with four to six inches of straw. After ten days the sweating will probably be completed and the straw removed and the potatoes allowed to dry. This should be done on a day when a dry wind is blowing. When the pile is dry thoroughly cover again with three or four inches of fresh dry straw and on top of this put three or four inches of soil, and in case they remain out during the winter a covering of shakes or similar material which would turn the water is required.

Pruning Blackberries

When is the best time to prune blackberries? — Subscriber, Waukena.

Use long pruning pole which has wire running from the cutting knife back to the handle. These may be used to cut up canes which bore fruit the past season. This long pole then answers as a hook to draw out prunings and saves tearing of hands and of clothes. This is the only pruning which is of value at this period of the year. In spring time when canes are growing very rank and reach the height of four or five feet they are sometimes pinched back so as to form lateral growth. This summer pruning is however, a matter which depends on conditions of growth and irrigation.

Fertilizer for Orange Trees

I have two Navel and one Valencia orange tree in my lawn, all young but bearing. I presume they should have some fertilizer. Please tell me what to use. Please don't say "use a complete fertilizer," or something similar, because such advice does not convey much meaning to a person totally unfamiliar with the subject. If possible to do so please give me the name of a preparation which will probably be best in my case.—Subscriber, Long Beach.

Notwithstanding the request of subscriber will suggest "complete fertilizer" is the best. It is simply a general trade name for fertilizer which is supposed to be balanced as to proportions of nutritive elements according to the needs of the plant. Every dealer in fertilizer handles this. However, we may say that for the inquirer stable manure, chicken manure or other forms of refuse make excellent application where one can spade them in. Again if the inquirer prefers he can buy the simples and apply bonemeal, nitrate of soda, or dried blood and potash as the complete or regular commercial fertilizer is used. One may apply from five to ten pounds per tree. In applying nitrate of soda make light application of not over two or three pounds, about the same amount of sulphate of potash and 10 or 11 pounds of bone meal.

Liver Disease—Worms

Plymouth Rock cockerel died after drooping for short time. Found his liver in very bad condition. It was about three times its natural size, covered with spots, and there was a sort of a blister covering almost the entire part of the two longer lobes. These blisters were filled with bloody water —about a half cupful in all—and the liver proper was covered with clotted blood. The liver was very soft. He had not lost weight. I know he had some worms. Do you think turpentine could have killed him? I used one teaspoon to a quart of water for one week in drinking water. Then I decided to try the tobacco treatment. None of my other chickens have been affected. We killed a Leghorn chicken last week for table use. I cut his intestines in pieces to see if he was worm infested. I found in his intestines something that I wonder if it was a tape worm. My poultry have always been very healthy until they got these round worms and I have lost so many since then. Do you think the tobacco treatment is injurious to laying hens? I was getting quite a few eggs when I began the treatment and the day I gave the last tobacco to them they all quit laying and I did not get any more eggs until yesterday I got one egg.—Subscriber, Redondo.

Your Plymouth Rock rooster evidently had enlargement of the liver. This probably affected both his crop and his bowels. All liver troubles are due to errors in feeding or to what often amounts to the same thing, lack of exercise, and many chickens are suffering nowadays from the lack of good wheat bran and of a sufficient variety of other mill feeds. Give all the green you can, a dose of Epsom salts occasionally, and as much range as possible, and make sure your mash is the best to be had. Mashes containing buttermilk are the most wholesome. It is better not to dose chickens very much. Turpentine and tobacco are powerful remedies and to be used with care. If you use tobacco exactly as directed by the state experiment station it ought not to check laying. The Leghorn rooster may have had tape worm. I cannot tell from the description given. The best thing to do with a worm infested flock is to move them, after treatment has been given, to clean soil. No matter how thoroughly the worms in the birds' intestines have been eradicated, the worms in the soil remain, and they are hard to get rid of.—J. A. K.

"They're *All* First Grade"

"And from new-bearing trees, too!—I can hardly believe that this lot has not been sorted. *That's* what comes of using my *head* as well as my muscles in planting and taking care of this new orchard."

"I thought when I sent to the Hercules Powder Co. for their book, 'Progressive Cultivation,' that all I could use dynamite for was to blast out the old, dead trees before I planted again, but I found out that *that* was only a starter.—

HERCULES DYNAMITE

can be used for all sorts of other things. Why—I blasted the holes for this whole orchard in a third of the time that the old, 'spade dug' method would have taken; and with only one helper instead of five. The young trees grew faster and looked better than any I've seen in this locality and are in bearing a full year ahead of their time."

"Then I used Hercules Dynamite to dig a mile of new ditches; that work took only about half the time I had reckoned on—and a lot less than half the back-ache. Now I'm using it to keep the earth loosened around the roots of my bearing trees and I figure that it'll make a difference of 20 per cent. in the yield this year."

"I'm advising all the men in this locality to send to the Hercules Powder Co. for their free book, 'Progressive Cultivation'—They're sending, too—for they can *see* how I am '*cashing in*' on the information that I got out of that book."

HERCULES POWDER CO.

1013 Chronicle Building

San Francisco California

Hercules Powder Company,
1013 Chronicle Building, San Francisco, Cal.

Gentlemen:—Please send me a copy of "Progressive Cultivation." I am interested in dynamite for _____

Name _____

Address _____

Old Papers

Have large amount of old magazines and newspapers which the junk dealers refuse to take. What shall I do with them?—Subscriber, Long Beach.

Where this material is not salable application should be made to the Red Cross. That organization can dispose of all such matter.

Liver Trouble

My hens seem well and thrifty but every week or so one will droop around for several days and finally die. Will you give me a good remedy for liver trouble, as I think that is what ails them? A large rooster died recently. He sat around several days. Finally I gave him some castor oil, then the next day his comb got very dark. So then I gave him some nitre but he was dead next morning.—Subscriber, Jolon.

Your hens may be suffering from lack of bran in their mash. Good wheat bran is hard to procure, and much of what is sold for bran is something else. As soon as you can get bran that is bran, add some to your mash, no matter what the mash is. Better still, mix your own, using twice as much bran as you use of other mill feeds. Meantime, give all the green feed your hens will consume. If you can give them range, so much the better. Epsom salts mixed in the moist mash, about one-half teaspoon for each hen, will help to clean out their livers. Give once a week for three weeks. It is possible the beef scrap in your mash is at fault. You say nothing about the ration your hens have been getting. It is safer to mix your own mash, unless you know the composition of the one you are using. If you buy your beef scrap you can test it by pouring boiling water on a little, and find out whether it is fit for hens or only good for fertilizer.—J. A. K.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.
Unsigned communications receive no attention.

Skin Disease

What can be done for a six year old mule that has a rash on the neck, sides and front legs? He rubs the affected parts, especially the legs, until raw. A local horse trader calls it jack itch and says it can not be cured. The mule eats and works well. Advice that will bring a permanent cure will be appreciated.—Subscriber, Uplands.

Clip off all the hair and scrub the parts clean with soap and warm water. When dry rub in thoroughly a mixture of one part zenoleum and four parts light grade of engine oil. Let the mule stand in the sunshine to warm the oil in. Repeat this in one week. One week later it would be good to scrub the mule again with soap and water and if any places appear to be still irritated rub in the oil again.

Tape Worm in Dog

Will you kindly advise through the Cultivator proper treatment for getting rid of tape worm in a young Boston bull pup? I have tried several kinds of prepared tape worm medicine for dogs but none are effective. While the dog has passed several sections of the worm it seems impossible to rid of the head as the worm keeps growing and the dog is thin and will not eat except at long intervals.—Subscriber, Anaheim.

Every morning for one week give the dog a teacup of milk with half a teaspoon of powdered areca nut stirred in it. Feed him a little of anything you may have at night but do not feed very much until you have found the whole worm. Please let us know what results you get.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.
Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Riparian Rights

My boundary line is the center of a creek. Has my neighbor any right to build a dam across the creek and take all of the water? I could use half the water by pumping, but am not prepared to do so as yet. Would I lose my rights if I allow him to proceed without protest?—Subscriber, Cave Gulch.

As the relative rights of appropriators, such as your neighbor, and riparian owners, such as yourself, have not been entirely harmonized with respect to the comparatively recent act creating the board of water commissioners, it would be the opinion of the writer that the safest thing for you to do would be to enter a notice of contest with the commission and have the commission determine the rights of your neighbor and yourself thereto. You might otherwise lose valuable rights.

Note Outlawed

I hold a note executed January 1, 1912, due in one year, which is secured by a trust deed upon real estate. Is the note outlawed? Can the trustee sell the real estate and pay the note?—Subscriber, Riverside.

The note is outlawed so as to preclude you from taking any personal action thereon against the maker of the note for any deficiency which may remain after sale of the real estate. On the other hand it has been decided in this state that a trust deed conveys the title to the trustee for the purposes of the trust and that the title remains in the trustee unless the debt has been paid or a sale made of the premises; the fact that the debt secured has become outlawed does not affect the title of the trustee nor his power to act under his trust.

WHAT IS AN OPTIMIST?

An optimist is a man who sees a light in the darkness where there isn't any—and a pessimist is a man who comes along and blows it out.

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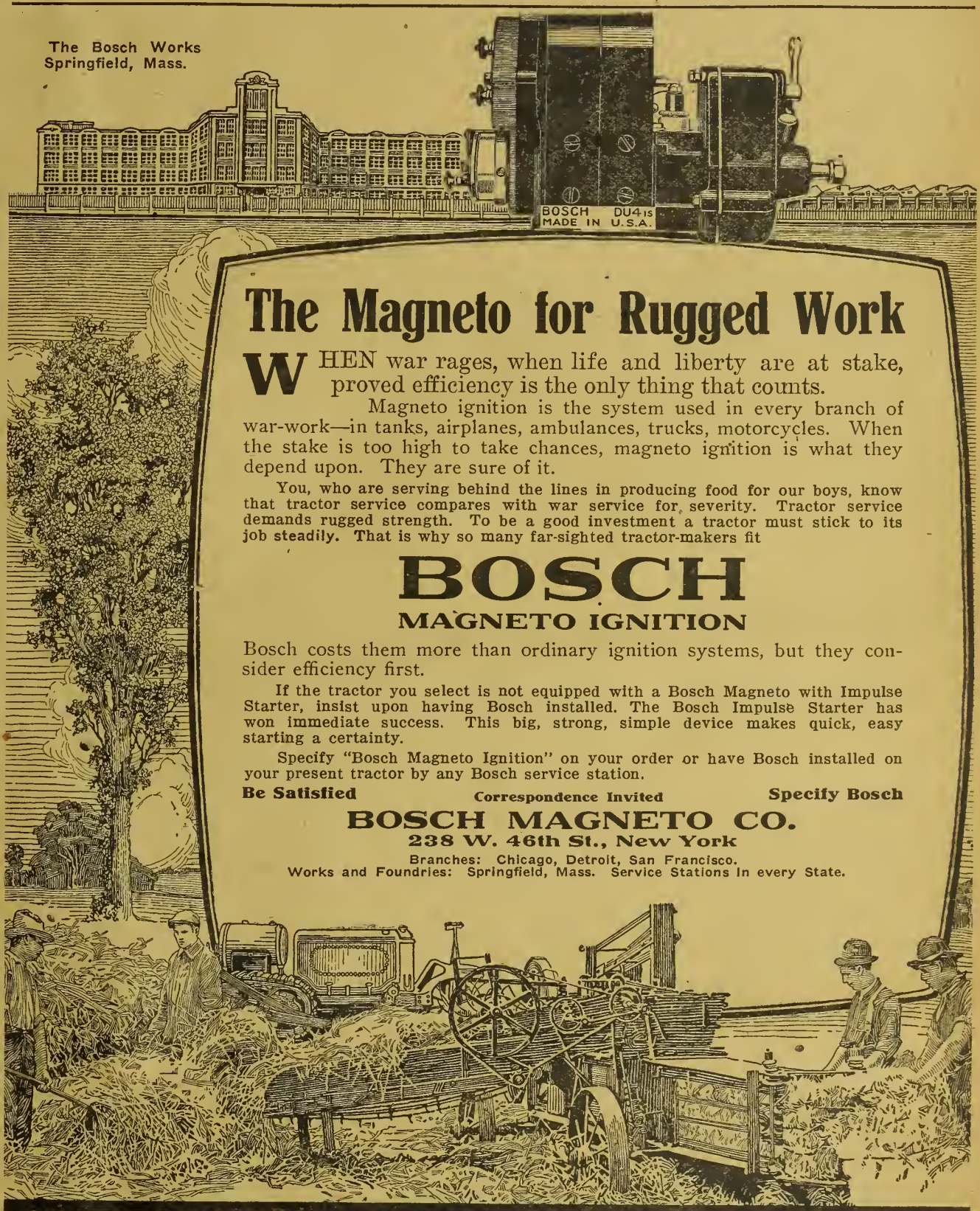

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For Sale—My 400 acre grain and stock ranch. Three miles from Pleasant Valley R.R. station, Mariposa County, California; 40 acres now planted to wheat, barley and oats; 100 acres more cleared and tillable, nearly all of the 400 acres could be farmed if cleared from large oaks and other trees; 3 and 6 room house, large barn, windmill and tank, and out buildings, blacksmith shop and tools, ranch fenced and cross fenced, part hog tight. Family orchard and garden irrigated from springs. Average rainfall 29.80 inches. Elevation 1500. The finest climate, summers cool and winters moderate, fine for fruit, no alkali or hard pan, one-half mile to school; $35.00 per acre, including 300 Angora goats, 30 head of dairy cattle, 5 head of horses, chickens and turkeys, and all farm implements and household goods. One-third cash, balance long time, 7 per cent, no trade. Albert F. Zurilgen (owner), Coulterville, Mariposa Co., California.

Absolutely Must be Sold and this price will sell it. A going dairy and alfalfa ranch, adjoining very prosperous San Joaquin Valley city, (160 acres) about half in alfalfa. Good two story eight room house, sanitary milk house, barns, shade and fruit trees, grapes, nuts and berries. Complete outfit of farming implements, wagon, etc. Irrigating water supplied by most dependable canal company in county. Good well, with engine and large tank, for stock and domestic purposes. This ranch can, with some expense be admirably subdivided. Price $24,000, half cash, balance in 3, 5, 7, and 9 years. A positive good buy. The People's Real Estate Co., Roberts Bldg., Los Angeles.

SNOHOMISH COUNTY, WASH. FARM LANDS. The greatest proposition on the market for the man who wants a farm; 12,000 acres to select from, 3½ miles salt water front, 20 miles of Beautiful Lake Shore, good towns, railways, steam boats, factories, mills, schools, churches, paved roads; where the largest profits are made, where the great variety of crops and wonderful productive climate make it the most productive farm section of America. Good lands in good localities as low as $25 to $35 per acre; 10 yearly payments; send for maps and literature to the BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

For Sale—10 acres of Valencia and Avocado orchard, 2½ miles west of Charter Oak. Box 56, Charter Oak, California.

For Sale or Exchange—Timber claim, 160 acres situated in Eastern Oregon. Yellow pine. "D," Cultivator.

Will Exchange beautiful home in Berkeley for good country realty. Address 5809 Ocean View Drive, Oakland, California.

SEEDS AND PLANTS

I Will Have One or Two Tons of Sorghum seed, especially selected for syrup making qualities for sale as long as it lasts. Send for list of different varieties, with description, prices and instructions for planting to get best results. Can send seed by parcel post. MARION GRABER, Hawthorne, California.

Seed Grain — We can make attractive prices on seed wheat and Winter or Gray oats and other field seeds. Have a full line of nursery stock. Supply of seed grain will be limited. Write now. 28 years in business. Carlton Nurseries, Carlton, Oregon.

R*O*S*E*S 50c per dozen. Fruit and Ornamental Trees, Plants, Vines, etc. Write for catalogue. KAVAN NURSERIES, San Bernardino, California.

Rhubarb Plants — Wagner's Giant Crimson Rhubarb plants, extra clean, 50 cents per dozen, $3.00 per hundred. Currier Bulb Co., Seabright, California.

New Hybrid Alfalfa—Spreading crown. Big crab-like roots, long lifed, etc. Write J. L. Lawson, San Jose.

Peruvian and Common Alfalfa Seed—Specialty. Write for prices and sample. Box 501, Fowler, California.

TREES

Budded Avocados — Fuerte, Sharpless, Lyon, Dickinson, Blakeman, Spinks, Taft, Linda, Rey, Queen, Knight and many others. A fine stock of field grown trees. $2.50 for one, $2.00 each by the 100. Better order now. Newberry-Sherlock, R. D. 2, Pasadena; Nursery, Rose and Palm, Altadena, California.

Grafted Walnut Trees—Placentia Perfection and Eureka on northern black roots. Citrus stock one year old from selected fruit bud wood. Also all the leading varieties of fruit and avocado trees. Order your trees early and get the first choice. Geo. M. Ketscher, 702 Orange Ave., Santa Ana. Phone Sunset 229W.

For Sale — Seed Bed Stock, Orange and Lemon Trees, and Avocado Trees of all standard varieties. Walker-Hubbard Nursery Co., San Fernando, California.

Olive Trees—Mission, Manzanillo. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwacofer, Hemet, California.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

For Sale—Extra fine two year old Valencia trees with sour root. S. R. Coate, Anaheim.

Walnut Trees—Placentia and Eureka on black root. La Puente Walnut Nursery, Puente, California. Phone 103.

For Sale — Choice, young, thrifty Citrus Trees. W. W. Burns, 631 Security Bldg., Los Angeles.

For Sale—8000 Mission and Manzanillo olives, $800 takes the bunch. York Nursery, Highland, California.

MACHINERY

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Windmills.
All sizes.
50 Redwood Galv. Tanks.
Ranch Tools.
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Buy good machinery.
Manf. new galv. tanks, 1000, 1500, 2000. DEMMITT CO., Upstairs, 120 N. Main St.

For Sale—5-10 Avery tractor in good condition. D. U. 4 Bosch magneto, extra strong guards on wheels for orchard work. Clarifier on carburetor. Also two 10 inch bottom Oliver tractor plow with rolling coulters. Can be seen at C. Stone's ranch, Casitas Ave., North Pasadena, California. Mail address R. F. D. 2, Pasadena. Home phone Fair Oaks, 1670.

For Sale—1 Lambert steel hoof wheel tractor, same as new. A fine machine for road work. Has rubber tires for road and steel grousers for the field. Don't fail to see it. It surely is a bargain, only $800. Wm. Gregory & Sons, 602 North Main St., Los Angeles.

For Sale—Bean TrackPULL tractor. Nearly all improvements attached. Perfect order. Very little used. Price One Thousand Dollars. A. Ryder, Loomis, California.

Gasoline Engines, the largest stock of Used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

For Sale—Sampson Tractor 10x25, overhauled and in excellent shape. Cheap. Geo. E. Small, Terra Bella, California.

For Sale—Holt 30 Caterpillar, good shape, snap. M. M. Smith, Santa Susana.

WANTED

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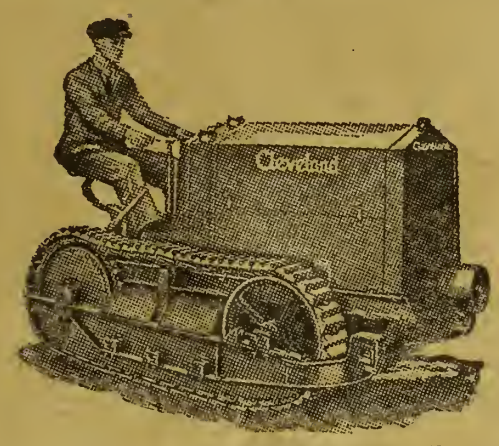

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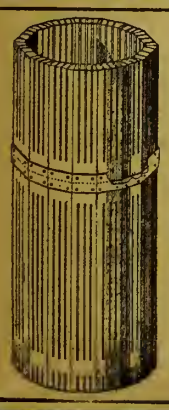

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Turkeys on the Farm

Written for California Cultivator By Jean A. Koethen

RAISING turkeys is an uncertain, often a discouraging business. This year they grow like weeds, and the happy farmer declares, "There's more money in turkeys than in anything else on the farm." Next year half the poults die, and we hear a dismal wail, "No money in turkeys. Can't raise them." It has been so for a good many years, and still each succeeding Thanksgiving finds the turkey crop apparently undiminished. From the days of the Pilgrim fathers we have always had turkey for the Thanksgiving dinner (provided we could pay for it) and doubtless we always shall. For every disgruntled turkey raiser that gets discouraged and quits at least one enthusiastic novice begins.

That this should be so is not strange, for the turkey is the most fascinating of birds. His stately carriage, his wonderful plumage, his friendly disposition, and best of all, his juicy breast, win him friends and friends of the lasting sort. Who that has once tasted roast turkey would not brave all sorts of trials for another taste? We are perhaps not quite so reckless as those Chinese Charles Lamb tells about, who burned their homes down for a taste of roast pig, but we are willing to take a good deal of trouble for a turkey dinner.

The difficulty with which turkeys are raised seems to be in inverse proportion to the amount of land available for their range. Blackhead, the disease which takes so many young birds, is called a "disease of domestication", and the very phrase suggests its remedy. Turkeys that are raised approximately as they would be in a wild state, that is, with a minimum of feed and a maximum of exercise, ought not to have blackhead. If they do, it is because of some other error in feeding or breeding. Given good range, the poult after the first week needs very little feed besides what its mother can find for it. Lacking suitable range, we try to make up the lack in our own way, and the poults suffer.

Every farm ought to have its flock of turkeys for it is on the farm that they are raised with the least trouble and the least loss. On the farm, if they are not so overfed that they prefer to loaf about the back step, they can wander, picking up stray bits of grain and green that would otherwise be wasted. If there are adjacent hillsides for them to roam over, so much the better.

The best breeders are birds not under two years of age, both male and female. Many persons do use yearling toms with two year old hens, and such a mating is fairly successful, but a two year old tom is to be preferred. The use of pullets as breeders is a waste of time. Fertility is very poor, and the poults that hatch are small and often weak. Strong, healthy offspring cannot be expected from hens under two years of age. One tom is sufficient for from six to eight hens.

Turkey hens begin to lay in February or March and most hens lay from 15 to 18 eggs before going broody. If a hen is promptly broken up she will soon begin laying her second clutch, which will probably not contain quite as many eggs as did the first. Some hens lay three clutches of eggs, some only two. It is customary to set the first and second clutches of eggs under chicken hens and let the turkey hatch the last herself.

Turkeys that are intended for the Thanksgiving market are kept on range until the last. Confinement is hard on birds that have never known anything else, though many are raised in confinement with a fair degree of success. Birds that have been on range through the summer, if confined for fattening, will lose rather than gain weight. The best grain for fattening is corn, and the best method of fattening is to begin gradually in October, giving first a little, then a larger ration of the corn till the birds are consuming all that can safely be given them.

Most of the birds marketed in California are marketed alive. When a turkey must be killed for market, the method called "sticking" is generally employed. Suspend the bird by the legs, head down, and with a narrow bladed killing knife, of the kind made especially for the purpose, make a diagonal cut inside the mouth at the base of the skull. This will sever the veins, and if the cut is properly made bleeding will begin at once. Next, force the knife down the mouth and into the brain at the back part of the skull. If you have pierced the brain the bird will give a peculiar squawk and the muscles will quiver. The piercing of the brain loosens the feathers, and picking should begin at once. Take the tail and large wing feathers first, then the body feathers. When the picking is done the turkey should be cooled by packing in ice cold water till the temperature has reached about 35 degrees. In dressing do not remove head, feet or entrails.

The most popular breed of turkey the country over is the Mammoth Bronze. White Holland and Bourbon Red apparently tie for second place. Both have excellent qualities, but for some reason neither has attained the popularity of the Bronze. The Bourbon Red is especially recommended as a farmer's turkey, since it is rather less inclined to roam than the Bronze.

Apart from the blackhead scourge, which kills most of the turkeys which die a natural death, the turkey is less liable to disease than the chicken. Cases of swellhead are rather common, but they ought not to occur in stock that has been accustomed to roosting out. When they do occur they are generally to be laid at the door of roupy breeding stock. We hear also of cases of rheumatism, but most of these are probably in young birds that have been allowed to run in the wet. The young turkey is very suceptible to dampness. The mature bird is very hardy, but infectious diseases, like chicken pox attack it as they do chickens.

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Mrs. H. P. Patton, Waverly, Missouri, writes: "I fed two boxes of 'More Eggs' to my hens and broke the egg record. I got 1500 eggs from 160 hens in exactly 21 days." You can do as well. Any poultry raiser can easily double his profits by doubling the egg production of his hens. A scientific tonic has been discovered that revitalizes the flock and makes hens work all the time. The tonic is called "More Eggs." Give your hens a few cents' worth of "More Eggs," and you will be amazed and delighted with results. "More Eggs" will double this year's production of eggs, so if you wish to try this great profit maker, write E. J. Reefer, poultry expert, 4708 Reefer Bldg., Kansas City, Mo., for a $1 package of "More Eggs" Tonic. Or send $2.25 today and get three regular $1 packages on special fall discount of a season's supply. A million dollar bank guarantees if you are not absolutely satisfied, your money will be returned on request and the "More Eggs" cost you nothing. You take no risk. Write today. Pin a dollar bill to your letter or send $2.25 on special discount for three packages. Or ask Mr. Reefer to send you free his poultry book that tells the experience of a man who has made a fortune out of poultry.—Adv.

RABBITS

Pine Ridge Rabbitry, Monterey, California. A fine line of Flemish Giants, New Zealand Reds and Long Haired Blacks. All stock guaranteed. Write for particulars.

For Sale—New Zealand Red, Utility and pedigreed stock. Reasonable prices. Stephen E. Banneck, 330 E. North Hicks Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giant, young stock. **Paul Kruger**, Watsonville, California.

GOATS

Largest Herd Swiss Toggenbergs on the Coast. 100 grade does bred to my $1000 Buck, Captain No. 256, A. M. G. R. Association, due to kid in February and March, $40.00 each, lots to suit. Crating $2.00 extra. Stamp. **Rae P. Williams**, Oakland, California.

For Sale or Exchange—Registered Saanen buck nine months. Thoroughbred. 15|16 Toggenburg buck, hornless. Correct marks and color, nineteen months old. Mrs. Zufich, Chittenden, California.

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Breeders of Registered Shorthorns—Milk Strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

For Sale — One pure blood imported French Percheron stallion, also few young work horses. L. E. Stockton, Ramona.

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For Sale—Solid and broken colors. J. E. Love, 1845 N. El Molino St., Pasadena, California.

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I didn't believe it possible to wash clothes and get them clean and white without boiling—but now I know it is—if you use Cocoa Naptha. This water is so hard, too, but Cocoa Naptha didn't mind a bit—he just dissolved the dirt like the magician he is and it took almost no rubbing to finish the job.

Sisters! Try Cocoa Naptha, but be sure you get the genuine—in a red monkey wrapper—made by Los Angeles Soap Co. All good grocers sell it.

In baking apples leave enough of the core in one end to retain the sugar and spice put in for flavoring.

Household Department

'LONG ABOUT THANKSGIVING TIME

By S. E. Kiser

Ain't it splendid to be livin', 'long about this time o' year,
Just around about Thanksgivin', with the mornings crisp and clear;
With the children's cheeks a-glowin', with the future lookin' bright,
And the shops and mills a-goin' like red blazes, day and night!
Ain't it bracin', ain't it cheerin,' when the colts kick up their heels,
To approach the corn crib, hearin' turkeys gobblin' for their meals?
Don't it make a fellow kinda satisfied with life and glad,
When it's got so hard to find a thing that's goin' to the bad?
Ain't it fine to feel the nippin' of the brisk breeze at your nose
When the old dead leaves go zippin' down the lanes in scraggly rows,
When you've hay to feed the cattle, when you love your fellow men,
And you've money you can rattle in your trousers, now and then!
Ain't it fine to wake from dreamin' of the home your boyhood knew
And to find the glad sun beamin' just the way it used to do,
Long ago, about Thanksgivin', when you'd energy to spare,
When your pa and ma were livin' and the days were always fair!

TURKEY FOR TEN

"THANKSGIVING ain't different from any other day," snapped Mellicent, making the most of the creak in her rocker. "What's the use of having a turkey when you've got only a reed-bird appetite!"

"It ain't just the turkey itself," replied Mrs. Delia Wyatt, with a knowing shake of her head, "though it's surprising how plumb crazy the kiddies are after drumsticks. Land of love, if Mr. Burbank could only produce centipede gobblers! But it's what the turkey stands for, Mellicent."

There was a moment's silence, then the creak reasserted itself. "Maybe there is—when you've got sons and daughters and grandchildren to sit round the table and look for it," snapped Mellicent; "but I'd like to know what's backing up a Thanksgiving turkey when you ain't got any folks to reunite for a family dinner?"

Mrs. Wyatt put her knitting into her work bag, with a sigh. "I've got to stop in at Johnson's to buy some chestnuts for stuffing," she explained, in apology for her glance at the clock and abrupt leave-taking. "What did I do with my hat? Oh, here it is on the chair. Mellicent, do you remember Angelina Snow?"

Mellicent nodded, her mouth bristling with five hat pins, as she stood with Mrs. Wyatt's jacket held out in both hands toward the open fire.

"You made me think of something she told me once—my left sleeve's caught there, Mellicent. Angelina had the blues terrible bad one morning," continued Mrs. Wyatt, sticking in the hatpins one by one as she talked, "but 'stead of sitting down and making company of them she trotted them right out for a walk. And what do you suppose she did then? She went up and down Spring Street, looking and looking, and every time she passed a woman uglier than herself she counted her off on a finger. When her fingers gave out she went home—cured. Angelina wouldn't have taken a blue ribbon at a beauty show, either."

Mellicent Jancey's practical, active nature had no time for sentimentalizing, but the morning after Mrs. Wyatt's visit new, strange thoughts—with twinkling eyes and wistful smiles—kept peeping out at her from behind the routine of daily duties, and at noon she suddenly dropped broom and duster, dressed with trembling fingers, surprised Teddy Roosevelt Tortoiseshell with a bear hug, and darted from the house—bearing the exalted expressions of an archangel and wearing two gloves for the same hand.

In the gathering twilight of that Thanksgiving eve Miss Mellicent's doorbell tinkled excitedly, and the next moment Mrs. Wyatt flashed into the sitting room.

"I wanted you from the first, Mellicent," she panted without preface, "but it made thirteen at table, and it never occurred to me until an hour ago that I could count Jessie's twins as one just as well as not. You'll come, of course?"

"Im sorry, Delia, but I've a previous engagement—with a Thanksgiving turkey of my own."

"You bought one, after all? But, Mellicent, it will be so lonesome eating it without any of your own folks here."

"I'm to have some of my own folks—ten of them!"

"Why, Mellicent, only yesterday you told me that there wasn't a living soul related to you this side the Rockies, and—"

"That was before you taught me how to find them, Delia. There' don't be frightened. I've not lost my mind. You remember about Angelina Snow? I got to thinking about the uglier lives than mine, Delia. Of the two dear Misses Prescott worrying over money matters ever since they lost so much in that mining venture; of my little dressmaker, who was the petted darling in her home back East and has to work for her living among strangers out here, because her lungs are weak and she can't live anywhere else; of poor, fastidious Mrs. Adams, who can only afford a third class boarding house; of—I won't go on, but they're all invited, and they've all accepted."

She rose, and as she turned toward Mrs. Wyatt the firelight revealed a face radiant with happiness. "I can't talk things out the way you can, Delia," she concluded, with a gay little laugh, "but just you come into the kitchen with me and see my Thanksgiving turkey!"—May C. Ringwalt, in Los Angeles Times.

STUFFING FOR THE TURKEY

Two quarts of stuffing is generally needed for a good sized turkey. The foundation is stale bread finely crumbled; when the crusts are used they should be soaked in cold water until soft, then squeezed as dry as possible. To this may be added a high seasoning and at least half a cupful of melted butter or other shortening. Additions may be made at will of chopped celery, raw oysters drained and quartered, raw sausage meat,

The Cultivator Patterns

9065—Child's Dress. Cut in sizes 2, 4, 6 and 8 years. The little waist buttons at the back and the sleeves may be in long or short length.

9071 — Ladies' and Misses' Waist. Cut in sizes 34, 36, 38, 40 and 42 inches bust measure. The waist slips over the head and the shield opens at the side.

9078—Ladies' and Misses' Set. Cut in one size. The set gives three widely different styles of neckware.

9050—Ladies' One Piece Apron. Cut in sizes 36, 38, 40, 44 and 48 inches bust measure. The apron is all in one piece, with short kimona sleeves.

9058—Ladies' Dress. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. The waist is gathered at the shoulders and the two-piece skirt is gathered all around at the slightly raised waistline.

8703—Girls' Dress. Cut in sizes 6, 8, 10, 12 and 14 years. A wide buckle holds the fulness of the drapery at the front and another one is used at the back.

9080—Ladies' and Misses' Two Piece Skirt. Cut in sizes 16, 18 years, and 26, 28, 30, 32 and 34 inches waist measure. The front and back panels are separate and they are cut in one with the belt ends which fasten at the sides.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

PATTERN DEPARTMENT
CALIFORNIA CULTIVATOR
Los Angeles.

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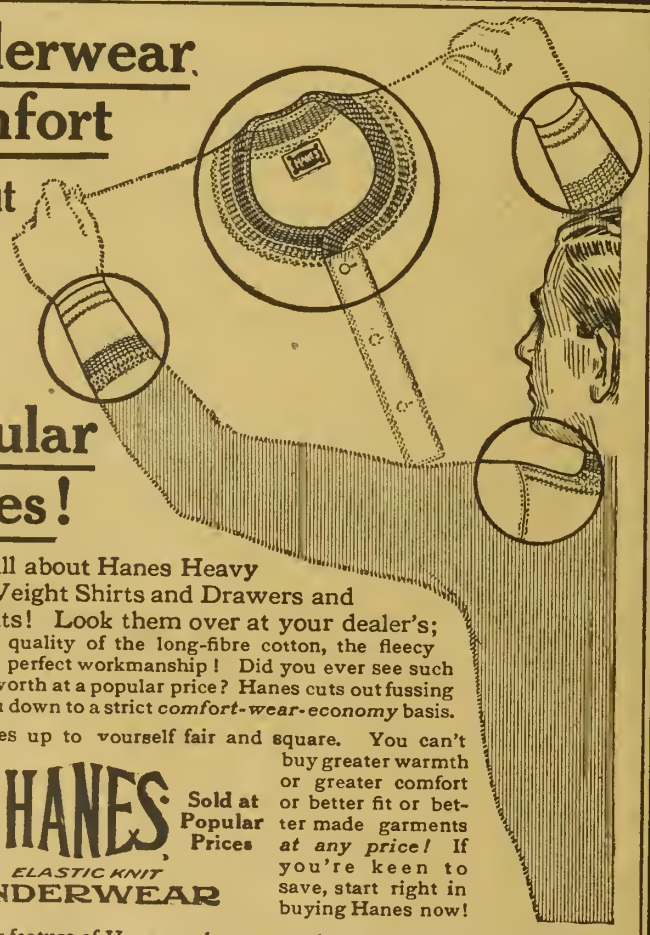

Know all about Hanes Heavy Winter Weight Shirts and Drawers and Union Suits! Look them over at your dealer's; size up the quality of the long-fibre cotton, the fleecy warmth and perfect workmanship! Did you ever see such underwear worth at a popular price? Hanes cuts out fussing and gets you down to a strict *comfort-wear-economy* basis.

Put Hanes up to yourself fair and square. You can't buy greater warmth or greater comfort or better fit or better made garments *at any price!* If you're keen to save, start right in buying Hanes now!

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Put every feature of Hanes underwear to the test. Seams are guaranteed unbreakable; tailored collarette snuggles up around the neck, keeps out the cold, and prevents gaping; elastic knit shoulders allow "give" with every motion. Hanes pearl buttons are sewed *to stay on!*

Hanes Heavy Winter Weight Shirts and Drawers have the three button snug-fitting, staunch sateen waistband and the comfortable crotch. Easy to put socks on, too, because the legs won't flare. Hanes Heavy Winter Weight Union Suits are the last word in union suit perfection. They are built for wear and for comfort! The Closed Crotch stays closed!

Real Warmth for the Boys! One of our big special lines is Union Suits for Boys. Superbly made, and combine all features of the men's suits. Downy softness and genial warmth win mothers and fathers as well as the boys. *You can't duplicate the value.* If your dealer does not have Hanes write us immediately.

GUARANTEE

We guarantee Hanes Underwear absolutely—every thread, stitch and button. We guarantee to return your money or give you a new garment if any seam breaks.

This Label on Every Garment

HANES

Buy None Without It

P. H. HANES KNITTING CO., Winston-Salem, N. C.

New York Office 366 Broadway

Warning to the Trade: *Any garment offered as Hanes is a substitute unless it bears the "Hanes" label.*

boiled chestnuts chopped or rubbed through a sieve, chopped hard boiled eggs.

How to Truss—It goes without saying that the turkey flavor absorbed by the stuffing is a direct loss in the flavoring of the bird itself, so that many prefer no stuffing. Where it is used a little is placed in the neck to give fullness to the breast; the body cavity is then filled lightly, as packing results in soggy stuffing. With a long trussing needle and about a yard of strong thin twine take a few stitches to close the body cavity; push the legs forward and close to the body. Insert the needle at the thick part of the thigh under the bone and push it entirely through the body. In returning pass it over the bone, pull the ends tight and tie down. Turn the neck flap over the back, turn the wing tips underneath so that they lie over the flap and fasten with a stitch; then run the needle back and forth through the body, going under the main wing bone and returning over it. Take a third stitch through the end of each leg, and in returning run the needle through the "pope's nose." When the roasting is finished the stitches can be cut on the side opposite the knots and the twine pulled out by the knotted ends.

Roasting — For a turkey weighing from eight to ten pounds fully three hours cooking in a hot oven will be necessary; for a bird weighing from twelve to fifteen pounds, another hour should be added.

SQUASH PIE

One cupful of cooked squash, two cupfuls of milk, two eggs, two-thirds cupful of sugar, one teaspoonful of ginger, one teaspoonful of cinnamon, one-fourth of cloves, one saltspoonful of salt. The squash should be thoroughly mashed and the two eggs whipped up in it. Mix together the sugar and spices and salt, and then add to the squash and egg. When thoroughly mixed add the milk and stir well. This should be baked with one crust and in a very moderate oven.

SCALLOPED OYSTERS

Scalloped oysters "as my mother used to make them" were the best things ever. They always accompanied the turkey at Thanksgiving and the goose at Christmas. Oysters never went into the dressing at our house—but everybody to his own taste.

They were always made in a great big galvanized milk pan—no baking dish was big enough to hold that generous scallop. Two loaves of stal bread were sliced and each slice buttered thickly. A layer of slices was placed in the bottom of the pan; the big juicy oysters were laid on—not here and there, but overlapping, salted and peppered. Then came another layer of buttered bread and oysters, then the top layer was of buttered bread. Now over the whole was poured all the fresh whole milk the pan would hold and it was slid into a medium hot oven. As the milk cooked into the bread more was added.

Such tantalizing odors as floated out from the kitchen during the process of cooking ,which took from three quarters to one hour when the pan came forth, crusty, buttery, golden brown on top, fluffy, and delectable within.

Above everything else, have your heart so full of the Thanksgiving spirit that it will overflow, creating an atmosphere of love and contentment about you, and it will take possession of the hearts of your family and guests.

TO CLEAN AN OILED MOP

These mops lose their efficiency when they become too dirty and caked with dust. They may be washed in strong hot suds, but this can be done much better if the mop is first washed in gasoline to cut the oil. Gasoline which has been used for oleaning should be saved for this purpose. After the mop is well washed in gasoline let it dry, then wash in suds. Then when thoroughly dry, oil it again and it is as good as ever. The best way to apply the oil is to pour a little in the tin box the mop comes in, and put the mop with the strings down into the can and let it remain for a few days to evenly absorb the oil.—Nellie M. Kilgore.

CAUSE OF THANKS

"I met a real optimist the other day," said the war hospital surgeon, "a fellow to whom I certainly doff my hat. He had lost a leg, and when they picked him up the first thing he said was: 'Thank God, it was the leg with the rheumatism!'" — Detroit Free Press.

THE WORST YET

First Scout—"Why is this cheese so full of holes?"

Second Scout—"That's all right. It needs all the fresh air it can get."—Boys' Life for October.

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Ask your dealer for Mayer Shoes. Look for the trade-mark on the sole.

F. Mayer Boot & Shoe Co. Milwaukee, Wis.

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made of the genuine Ironclad Khaki (the kind Uncle Sam uses) carry the yellow "army" label, like the above. Look for it and Guaranteed Bond in the garment before you buy.

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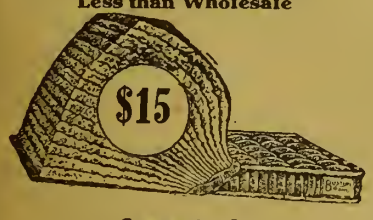

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Large size Imperial edge non-stitch. Art Ticking with side straps. In fact a Mattress of Superior Quality.
No Linters, Cotton Motes, or other Inferior Substitute Filling. Guaranteed 100 per cent Staple Cotton. Send for Price List.

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Write for further information. Representatives wanted.

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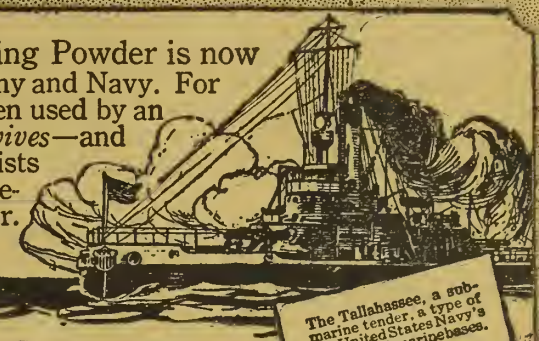
QUALIFIES WHERE QUALITY STANDARDS ARE STRICTEST

Calumet Baking Powder is now used in the Army and Navy. For years it has been used by an army of *housewives*—and that army enlists thousands of recruits every year.



The Tallahassee, a submarine tender, a type of the United States Navy's floating submarine bases.

Housewives use Calumet because it produces best results. They judge it by results entirely. Government experts selected Calumet for this same reason—and other *reasons*, too. They looked *back* of the results. They demanded purity in Baking Powder, and purity in bakings, as well as surety of results.

They selected Calumet because they could secure these desirable qualities—and were *certain* of getting them. The strongest guarantee you could ask for Calumet's thorough *goodness*. Try it.

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Breakfast in a room made comfortably warm by Perfection Oil Heater.
Lights at the touch of a match; gives instant, cozy warmth. No smoke or odor.
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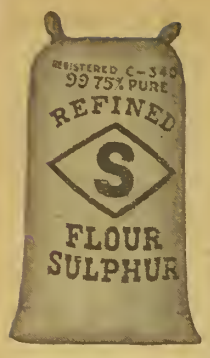

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It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards SIX times they will not be affected by MILDEW or RED SPIDERS.

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CITRUS TREES

Orange, Lemon, Pomelo and Lime, bud selected (pedigreed) trees, subject to immediate delivery. Correspondence invited and prices cheerfully quoted.

Founded in 1889

R. M. Teague Citrus Nurseries

SAN DIMAS, CALIFORNIA

PRUNING DECIDUOUS FRUIT TREES

Continued from Page 523

that five or six may be left in a vase or goblet form as far as possible, shortened to about one-half, and the remainder of the shoots cut off. The small laterals and spurs must be left, the long ones being shortened annually, and thinned out if too dense.

Three years after planting, repeat as in above paragraph, leaving eight to ten branches, maintaining the same general shape.

If there is a prevailing summer wind,—usually from the northwest—endeavor always to prune so that growth towards the wind is encouraged. As you approach the tree, you will notice a preponderance of growth on the opposite side, and the first thing to do is to remove much of it, to balance the head.

After this, which is really essential with all deciduous fruit trees, let the pruner, if he is a thinking, careful man, use his own judgment, but do not let him run to any extremes, being governed by his own common sense under existing conditions. Personally, I would continue the same method indefinitely.

Use only the best hand pruning shears and pruning saw,—never, under any circumstances use the two-handed shears, as they mutilate, and do not cut clean. Any cut surfaces of an inch or more in diameter should be covered with asphaltum, or Oronite roof paint. The latter is not suitable for large cuts. Make a smooth, clean, sloping cut, and, when removing a limb, please, as you value your tree, do not leave stubs, snags or hat pegs.

Do not forget that a fruit tree will respond to good treatment as much as will your dairy cow, and that it will live and be profitable as long as you give it proper care.

THE OLIVE OIL SITUATION

Continued from Page 527

Prices

Prices offered for olives, pickle and oil sizes, are higher than ever known in the business before. Orchard run buying has been resorted to by a number of the ripe olive packers and prices on this basis range from $150 to $185 a ton. For oil sizes, bought on grades under 10/16ths in size, it is reported that as high as $110 a ton has been offered. In all probability, though, the purchaser in this case wanted but a limited quantity of fruit at this figure. Buyers of olives to be used in the Greek and Italian styles are paying all the way from $135 to $200 a ton for fruit, orchard run basis, though by far the larger quantity has been bought for less than $150 a ton. Where ripe olive packers have been buying on grade the prices have ranged from $100 to as high as $350 a ton.

RAISIN EMBARGO LIFTED

The food administration announced on November 18 the lifting of the embargo on raisin shipping from California. The embargo was lifted as the result of an agreement between the war trade board and the food administration.

It takes a live fish to swim up stream; any lobster can float down.

A poet has been known to make dollars out of lines that ordinary mortals could not make sense out of.

Save the old burlap bags that gradually accumulate on the farm. They may serve the place of new and expensive packing material on many future occasions.

Carelessness is one extreme and morbidness is the other extreme. While seeking the middle of the road, do not give morbidness the benefit of the doubt.

Mary had a little lamb,
She fed it gasoline;
It hung around the fire one night,
And hasn't since Benzine.

An interesting side light on Italy's entrance into the war is given by a young Italian lieutenant—ex-business man. He says:

"Our people were not prepared to go to war. We had no arms, no trained men. I, knowing nothing of soldiery, was put with a book of instructions to drill 60 men. Two nights later we were ordered to attack the Austrians with Alpenstocks—yes, a German name, but a good weapon."

Los Angeles Market

Los Angeles, Nov. 20, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.
Cal. Extra Creamery 58½

CHEESE

Brokers' prices:
California fresh, lb. 31

EGGS

Exchange quotations. Price to retailers 2 to 3 cents higher.
Fresh extras 70
Case Count 60
Dairy Exchange prices past week on fresh extras:

POULTRY

We quote to producers.
Broilers .....37@41
Fryers 33
Hens, small, 28; heavy 31
Colored 32
Ducks, lb., 25; ducklings .....28@30
Roasters 30
Roosters, old 20
Turkeys .....30@33
Geese 28
Belgian Hares 20
Squabs .....30@35

LIVESTOCK

The Los Angeles market is feeling the effect of government export orders and the demand for good steers, showing about a three-quarters finish, is strong, and prices are improving. A few choice steers sold last week for $13.85. Good steers are worth about a dollar more than last week.

The demand for good cows is very firm, due to the fact that the better steers are used to fill government orders and consequently much of the trade that formerly depended on steer carcasses is finding it necessary to use cow meat.

Los Angeles had an over supply of hogs last week and prices were shaded accordingly, however, the accumulation has been used up and the prices paid the first two days of this week were stronger. There is a feeling that the market is bound to improve.

Lambs are reaching this market in plentiful supply and prices are fully steady. The local market is glutted with mutton.

Report of live stock conditions on the Los Angeles market as compiled by the United States Department of Agriculture, Bureau of Markets, through the local office:

Good Steers .....12.50@13.50
Medium Steers .....11.00@11.50
Common .....9.50@10.00
Good Cows .....8.00@9.00
Medium Cows .....7.00@7.50
Common and canners .....5.50@6.00
Hogs—
Prices quoted below are for carload shipments. Driven-in, or truck hogs sell for ½ cent less:
No. 1 hogs, 150-200 lbs.,.....16.00@16.50
No. 2 hogs, 250-3.50 lbs. .....15.00@15.50
Sheep—
Lambs, 65-80 lbs. .....15.00@15.50
Wethers .....11.00@11.50
Ewes .....7.00@7.50

POTATOES

Wholesale selling prices:
Burbanks .....2.50@2.85
Sweet, lug .....75@85
Inyo Russett .....2.50@2.60
White Rose 2.75

ONIONS

Wholesale selling price, cwt.
Australian Brown, lug .....1.75@2.00
White Globe, cwt. .....3.75@4.00

VEGETABLES

Wholesale prices:
Beans—String 10
Limas, lb. .....5@6
Cabbage, cr. .....2.00@2.50
Carrots, doz. .....40@45
Cauliflower, cabbage cr. .....2.40@2.50
Celery, cr. .....2.00@3.75
Cucumbers, lug .....1.00@1.05
Egg Plant, lb. .....4½@5
Lettuce, cabbage cr. .....85@90
Parsley, doz. 15
Peppers, Chili, lb., 4@5; Bell, lug...60@65
Pumpkins, lb. best .....1@1½
Rhubarb, bx., Crimson, ...75
Strawberry .....1.00@1.10
Radish, doz. .....15@20
Spinach, doz. 20
Squash—Hubbard, best, lb.....1½
Tomatoes, unwrapped, ripe lug..1.10@1.25
Turnips, doz. .....35@40

FRUITS

Apples—Bellefleurs, bx. .....1.60@1.85
Apples—Bellefleurs, bx. .....1.50@1.75
Yucaipa Delicious .....2.75@2.85
Pearmains 1.75
Jonathans, lb. .....5@5½
Newtons .....1.65@1.75
Cranberries, Ore., Wash., 1-3 bbl. bx.3.75
Grapes—Homegrowns, best per pound, Tokays, 8; Cornichons, 7@8; Malagas, 8; Muscats, 6@7; Emperors, 7.
Pears — Bartletts, stor. lb., 8; D'Anjou, lb.,7; Winter Nellis, lb., 5@6.
Persimmons, lb. .....5@7
Quinces, lug. .....85@1.25

CITRUS

Oranges—Off bloom Navels packed small, 6.00@6.50; large, 5.00@6.00 bx.; Tulare County, new crop Navels, medium sized fancy 9.50@10.00.
Grapefruit—Tulare County Seedless, fy., 3.25@3.75 bx.; Arizona Seedlings, loose, 6c lb.
Lemons: Fancy packed, 5.25 bx.; loose, 4.00.

HONEY

Cash to producer on farm:
Extracted Light Amber, Sage and mixed in small lots, 21@21½, lb.; White Sage and Orange, supplies practically exhausted, very few sales, 22@22½; Light Amber and Alfalfa, mostly 20@21 lb.; Comb 24 section cases, No. 1, 5.50 case; Beeswax, 36@37 lb.

BEANS

Price to retailer, cwt.:
Pinks .....7.50@8.00
Tepary 5.00
Lima 11.50
Large White 10.00
Small White 10.50
Blackeyes 6.25
Garbanzos 11.00
Lentils 25.00
Kidney 12.00

HAY

Quotations by Nichols - Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:
No. 1 Tame Oat .....26.00@28.00
No. 2 Tame Oat ....23.00@25.00
No. 1 Barley .....22.00@24.00
No. 2 Barley .....19.00@21.00
No. 1 Alfalfa .....20.000@22.00
No. 2 Alfalfa .....17.00@19.00
Quotations furnished by California Alfalfa Growers' Association, Riverside, California.
No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS

Prices offered on exchange. For federal price see San Francisco market:
Utah No. 1 white oats 2.50
Portland standard oats 2.50
Eastern white oats No. 2 .....2.50
No. 1 bright feed barley 2.27½
Milo maize, local 2.54¼

San Francisco Markets

San Francisco, Nov. 19, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:
Two-pound squares, parchment wrapped, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.
Dairy Exchange quotations, lb.:
Extras 61

CHEESE

Dairy Exchange quotations:
Cal. Flats 32
Ore. Triplets 34½

EGGS

Dairy Exchange quotations:
Extras 82
Selected Pullets 64

POULTRY

We quote to producers, lb.:
Per lb.: Large hens, 36@38; small hens, 35@37; broilers and fryers, ¾ to 1½ lbs., 40@45; 1½ to 2 lbs., 39@40; 2 lbs. and over, 37@38; old roosters, 23@24; young roosters, 35@38.
Belgian hares, live, 19@21.
Jack Rabbits, doz., 3.00@3.50.
Squabs, 3.50@5.00.
Turkeys, dr., 38@42; live, 32@33.

LIVESTOCK

Prices gross weight:
Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.
Steers, lb., 10¼@12½; thin, 8@9; cows and heifers, 7@8¼; thin, 5@6; calves, 8@11.
Sheep — Lb. gross weight: Wethers, 11½@12; ewes, 9@9¼; lambs, yearlings, 12@12½; milk, 14@14½.
Hogs—Hard grain fed, weighing 100 to 140 lbs., 16; 140 to 250 lbs., 16½; 250 to 325 lbs., 15½.

POTATOES

Wholesale selling prices at wharf, cwt.:
River, cwt. .....2.00@2.25
Sweets, lb. .....2½@3

ONIONS

Wholesale selling price on wharf, cwt.:
Australian, Brown and Yellow..1.00@1.25

VEGETABLES

Wholesale selling price:
Artichokes, doz. .....40@75
Beans, String, lb., 10@14; Limas...10@12
Brussels Sprouts, lb. .....5@6
Cauliflower, doz. .....60@85
Celery, doz. .....50@70
Cucumbers, hothouse, bx. .....2.00@2.25
Lettuce, doz. .....20@35
Peppers, Bell, lug, 75; Chili 75
Southern Iced, cr. 2.00
Pumpkins, sk. 75
Rhubarb, bx. .....1.25@1.50
Squash—Cream .....75@1.00
Hubbard, sk. .....1.25@1.50
Tomatoes, lug. .....1.00@2.25
Turnips, sk. .....1.25@1.50

FRESH FRUITS

Bellefleur .....1.00@1.75
Newton Pippins .....1.25@1.65
Bananas, lb. .....9@9½
Berries—Ch.: Strawberries, 13.00@15.00; raspberries, 10.00@13.00; blackberries, 10.00@14.00; huckleberries, lb., 12½@14.
Figs, bx. .....75@1.15
Grapes, cr. .....1.00@1.25
Olives, lb. 12½
Pears, Bartletts, wrapped bx. ..2.25@2.50
Beurre Hardy, lug 1.50
Kieffer, bx. .....2.25@2.50
Winter Nellis, lug. 1.50
Persimmons, bx. .....75@1.50
Pomegranates, ½ orange bx.....1.75@2.00
Pineapples, doz. .....3.00@4.50
Quinces, bx. .....90@1.15

CITRUS

Lemons, bx, fy., 4.50@6.00; lemonettes, 3.00@4.00; grapefruit, 2.00@3.50; Limes; 2.00@2.25 per half box; Mandarins, 2.50@3.00 per cr.

NUTS

The Almond Growers' Association has established opening prices as follows per pound:

Nonp.	27½
I.X.L.	25½
Ne Plus	24½
Drake	20

Outside dealers have named prices above these quotations and it is understood association stock is practically closed out and prices withdrawn.

Walnuts: Net prices have been named by the California Walnut Growers Association:

No. 1 Softshell	28
No. 2 Softshell	25
Jumbo	30
Fancy Budded	31½
Golden Gate Budded	29

Franquettes, Eurekas and other fancy varieties sold on sample. No. 1 Softshell guaranteed 88 per cent good; Fancy Budded, 90 per cent. In case of worms or damage by ants not more than five per cent.

RICE

Prices which rice millers of this state have voluntarily agreed with the food administration for California to pay to growers for paddy rice are as follows:

No. 1 and No. 2 Japan, in sacks, $4.32 per 100 pounds.

No. 3 and No. 4 Japan, in sacks, $4.16 per 100 pounds.

Prices for other grades will be paid for on a basic value proportionate, and no higher prices than those quoted above for any grades whatever will be paid.

The millers agree further to sell cleaned rice and by-products for prices not to exceed the following:

Fancy Japan, 1½c per pound.
Choice Japan, 7⅝c per pound.
Fancy second heads, 6⅞c per pound.
Screenings, 5⅝c per pound.
Brewers', 5¼c per pound.
Rice polish, $50 per ton, carlots.
Rice bran, $36 per ton, carlots.

BEANS

Jobbers' prices, cwt., recleaned:

Limas	11.00
Small Whites	9.40@9.50
Large Whites	8.00@8.25
Blackeyes	5.90@6.00
Pinks	6.75@6.90
Bayous	7.25@7.50
Mex. Reds	6.75@7.00
Cranberries	8.25@8.50

HONEY

Jobbers' prices:

White extracted	20@22
Light amber extracted	17@20
Amber extracted	16
White comb, cs.	4.50@6.00
Light amber comb, cs.	3.50@4.00
Beeswax	32@34

GRAIN

Wheat—Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per. Bushel	Per Cental
No. 1	$2.20	$3.62 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	$2.18	$3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	$2.16	$3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 ½

For sacked grain add 9 cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.

Barley—Feed, 2.10@2.17½ per cental for choice spot; shipping, 2.20@2.25; milling, 2.25@2.30.

Oats—Red feed, 2.55@2.70 per cental; seed, do, 2.95@3.05, with recleaned at 3.15 @3.30; black, 2.55@2.65 for feed and 3.00 @3.15 for seed.

HAY

Under date of November 16, Scott, Magner & Miller says:

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.

Fancy Wheat Hay (light 5 wire bales)	28.00@30.00
No. 1 Wheat or Wheat and Oat Hay	25.00@27.00
No. 2 Wheat or Wheat and Oat Hay	20.00@24.00
Choice Tame Oat Hay	25.00@27.50
Other Tame Oat Hay	20.00@23.00
Wild Oat Hay	20.00@22.00
Barley Hay	20.00@22.00
Alfalfa	18.00@22.00
Stock Hay (in order)	18.00@21.00
No. 1 Barley Straw, bale	50@80

Damaged Hay (all kinds), according to condition.

Other Tame Oat Hay	22.00@24.00
Wild Oat Hay	22.00@24.00
Barley Hay	22.00@24.00
Alfalfa	22.00@25.00
Stock Hay	18.00@21.00
No. 1 Barley Straw, bale	50@80
Damaged Hay (all kinds)	Nominal

ANOTHER FINE CATALOGUE

The Leonard Coates Nursery of Morgan Hill is sending out its 1919 catalogue. The cover is a view of the nurseries from the hill on which the office is located, somewhat conventionalized and printed in colors. It is most attractive, and text and illustrations give a fund of information regarding fruit trees and ornamentals. The first half dozen pages have a large number of valuable hints to fruit growers.

How to Sell Your Crop

A DISAPPOINTED buyer just naturally becomes a knocker and hinders many sales," says a writer in "Sunsweet Standard," the organ of the California Prune and Apricot Growers, and follows up his text with an exposition of how to meet the situation which now confronts the prune men. It is packed so full of common sense help that we give almost entire for the benefit of Cultivator readers:

There are more damaged prunes, caused by excessive rain, than ever before since prunes were grown in this state. Almost all first quality prunes are ordered by the government for the use of soldiers. So that whatever prunes are in the general market must come largely from those damaged by rain, and grade in quality from slightly inferior to such as are unfit for food. The ethics of selling inferior food products which in appearance may easily be mistaken for first quality is a big problem of commercial morals.

But another problem is the effect it will have on our market to have most of the prune eaters for this season gain the impression that prunes are very poor food. Every candid discriminating person will be sure that no one eating these poor quality prunes will praise them. And in many cases disapproval will reach the degree of severest condemnation. Just think of it. Every dish of damaged prunes eaten for the next year will provoke mild disapproval or bitter condemnation. Honestly now, what effect will such general mental attitude have on the future purchase of prunes? Because of the rapid increase of our production we need to multiply friends of our fruit, but instead will we not have blocked our market by this adverse opinion which ranges from apathy to positive disgust?

Of course, most of those who try to justify the putting of this damaged fruit on the market say candidly that it ought to be correctly labeled and sold for just what it is. But the probabilities are all against such good intentions being carried out to the final selling. The plain ordinary business self interest of the retailer will tempt him to forget (?) the label of their damaged condition. Most of them will he sold as California prunes with no explanations. Even should one buy them as second class fruit, the memory of their taste will be like the memory of taking medicine. I think a big majority of the hundreds of growers who have spoken to me are more or less positive that it would be financial wisdom to keep out of the market all prunes which are seriously rain damaged.

And if such a majority are willing to sacrifice their present gain for a better and friendly market for all prunes, have they a right to insist that their market shall not be hurt by those who are influenced more by present gain than future profit? The same principle is involved in protecting our orchards. General approval has sanctioned law which forbids one, for his gain, to buy and plant nursery stock infected with disease which will endanger all orchards. Growers would protest justly and effectively against any such action seriously hurtful to their production. Then why have they not an equal right and duty to protest against any individual doing, for his gain, that which must seriously harm the market upon which our industry depends to the same extent as on successful production? Thousands of orange trees have been legally destroyed, at the owner's loss, because their infested state endangered all orange groves. That which endangers our market is as much a menace to our industry as to endanger the life of our trees. Then have those who think their industry threatened, a right to invoke existing law or authority to hinder the sale of fruit so damaged by mold and ferment that it will seriously demoralize the market of our product?

The case is not too simple to admit discussion. One may say justly that poor fruit may still be fit for food; that all fruit may be divided into grades by varying quality; and that it is not wrong to sell second or fourth quality—if it is sold honestly for what it is. And the answer lies under that big little "if". There is no way to secure or insure its sale "honestly for what it is." The probabilities are all against such frankness.

The further and more important fact remains that most of this defective fruit is affected more or less by mold or ferment, which makes it liable to condemnation by the pure food authorities. One man told me frankly that he counted it unfit for market, that he intended to sell it to a certain packer, and hoped the authorities would seize and condemn it before the packer could get it into market. Another protested with spirit and some heat that no one had the right or privilege to hinder his selling fruit that he counted suitable for food. If that liberty were granted generally the pure food authorities would have nothing to do.

It seems to me the case can be put clearly and fairly like this. If the sale of these prunes seriously damaged by rain, mold, or ferment, under conditions and methods likely to prevail, will greatly impair the market for prunes, according to prevailing judgment, then all who are vitally interested in the preservation and improvement of such market have a right and duty to exercise all lawful and just influence to interfere with any individual action which threatens our common industry. It is the function of the pure food authorities to protect consumers against every form of deception or improper supply. It is the privilege and function of the growers to cooperate to protect their industry from all harmful actions of individuals for personal gain.

GOVERNMENT MAY DRY FRUITS AND VEGETABLES

Establishment of an industry within the United States to dry fruits and vegetables as a means of conserving the food supply of the nation is one of the important projects started by the department of agriculture under authority conferred in the regular agricultural appropriation act recently passed.

An appropriation of $250,000 is included in that act to enable the secretary of agriculture to determine the best means and processes of dehydration and to disseminate information as to the value and suitability of dried products for food. Authority is given to establish and operate plants for drying fruits, vegetables and other edible products for supplying food for the army and navy, if such action is deemed necessary by the president. Cooperation with commercial drying concerns is also provided.

The secretary of agriculture has designated an advisory board to administer this appropriation and outline the work to be done under it. The advisory board is to consist of representatives of the bureaus within the department of agriculture which are concerned with food production, regulation, and conservation, and of one representative each of the food administration and of the sanitary corps of the army.

SAVING IN TONNAGE SPACE BY DRIED FRUIT SHIPMENTS

The war department authorizes the following:

Another saving in tonnage space has been effected by the quartermaster corps in the shipment of dried fruits for the use of the American Expeditionary Forces. Fruits will be shipped thoroughly dried instead of in the semidried condition in which they are found in commercial markets.

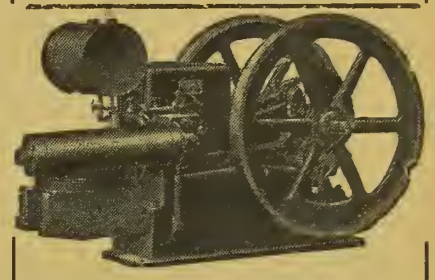
Considerable tonnage will be saved, as prunes, dried apples, and dried peaches are largely consumed by our troops overseas. The new practice of shipping the fruits thoroughly dried will also act as a preventive against spoilage and worms.

DESTROYING STUMPS

The removal of stumps without use of dynamite is a laborious matter. The following method, however, is said to be effective in destroying stumps without digging or pulling them.

Bore a one or one and one-half inch hole into the top of the stump to a depth of 18 inches. Put into this hole about two ounces of saltpeter, fill the hole with water, and plug tightly. The best time to do this is in autumn. In spring, remove the plug, fill the hole with kerosene and ignite, using a small piece of cloth as a wick to start the fire. If the work is properly performed, the stump should burn slowly and completely without further attention. — B. O. Longyear, Colorado Agricultural College.

Witte Irrigating Engines



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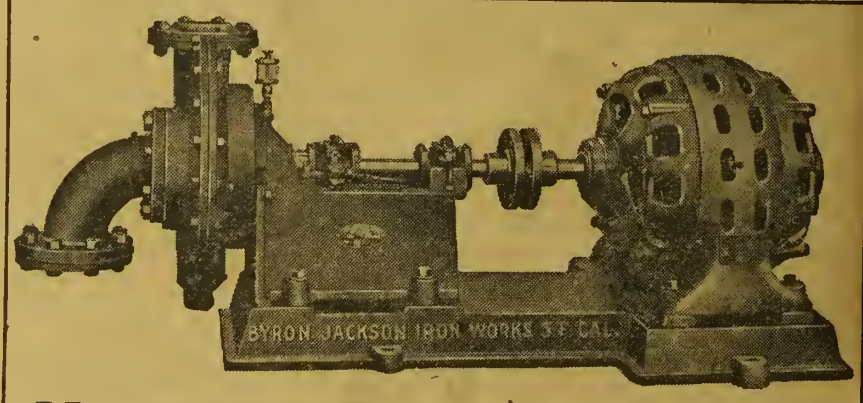

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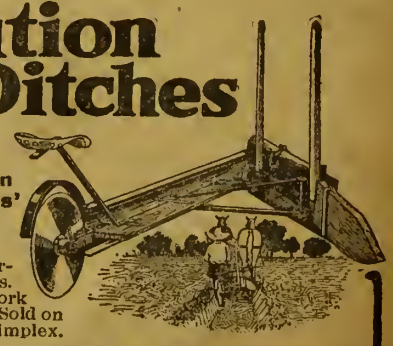

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — November 30, 1918 — No. 22

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Combined with California Cultivator 1914.
Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916.

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Saturday, Nov. 30, 1918

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We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

A detachment of the Boy's Work Reserve of Arizona is shown busily engaged in cleaning weeds from the banks of canals of the Salt River Valley Water Users' Association. On page 3 Mr. Bemis tells of the part these boys have taken in the "produce more" campaign.

LOWER THE FREIGHT

An orange grower of Upland—and many another — wants lower freight on fertilizer, especially sheep manure. He says Nevada, Idaho and Montana produce vast quantities. California orchards need it, but present rates are prohibitive.

When Mr. McAdoo gets a spare moment he may see possibilities of increased production in wider distribution of manures.

Manure spreaders have made millions of extra bushels of products and the railroads, Mr. McAdoo, will make fine "spreaders."

AGAIN, THE FAIR

The Liberty Fair was to open at Exposition Park, Los Angeles, Thursday, November 21. Action by the board of health caused the opening to be changed to Saturday, November 23 — then to November 25. Just now it appears that the opening is highly indefinite.

Practically all the live stock and other exhibits are being held intact and the gates can be opened on very short notice.

The management is determined that the California Liberty Fair will become a fact—just as soon as possible. R. P. R.

W. D. HOARD

In the death of W. D. Hoard, editor and founder of Hoards Dairyman, who died Friday, November 22, agriculture in general, and dairy husbandry in particular, lost one of the strongest forces and sanest minds that has ever been attracted to agriculture.

Hoard believed in agriculture as a basis of national wellfare, and he believed that live stock husbandry was fundamental to better agriculture, and because he held to these facts, so sincerely, he could always be found at the front of any movement that promised to be a factor in establishing a better system of farming.

Few men have rendered equal service to the cause of better farming.

KILLING 'EM YOUNG!

The first auction sale of fat hogs attempted in Napa County was a failure owing to the fact that no buyers were present. It will be recalled that in the November 23 issue of the Cultivator it was suggested that such a contingency constituted the "nigger in the woodpile."

According to our information, the packers were notified and cannot plead that they had no knowledge of the event. We suppose that they will offer as an explanation the fact that they were short of labor and long on hogs. But, such being the case, there was no reason why they could not notify the management of the sale in time to prevent a failure. We would be inclined to overlook the packers' failure to put in an appearance, if this was the first time that such a situation developed, but it is not the first time, and it has every ear mark of a deliberate attempt to discourage the producers in their efforts to sell to better advantage.

The average producer is disposed to be fair and is entitled to fair treatment. He has been told by the packers that they could pay a better price if they could buy more uniform lots, and these auction sales served in a fairly satisfactory way to provide an opportunity for buying graded stuff. Now, if the packers are not willing to meet the producers half way—well, sooner or later the question of live stock markets is going to be settled—and settled to the complete satisfaction of the producer—the packers to the contrary notwithstanding.—R. P. R.

THIS WAY OUT

Last week we commented on the fact that barley growers were feeling somewhat uneasy as to their future market. This week we note that citrus growers are interested in obtaining lower freight rates on manure.

The solution of either problem is not difficult, and in the end they will be solved by assigning live stock a larger place in the farming practices of this state.

There are two ways open to the producers of California. They can give early recognition to the established fact that no satisfactory or permanent system of agriculture can be maintained without the use of live stock, or they can bide their time and continue their present plan of farming until the fertility of their soils becomes so depleted that they will be forced to turn to a system of live stock farming.

The keen interest that is being manifested toward all kinds of live stock would seem to indicate that, generally speaking, we are headed in the right direction.—R. P. R.

FARM BOOKKEEPING

Correct accounts are as necessary to the farmer as to any other business man and if the best results are to be obtained he must know what lines of his business are bringing profits and which are causing loss. The small farmer who is doing at least part of his own work is the most remiss in this line. He can tell at the end of the year whether he has as much property as he had at the beginning, but is not able to tell whether another line of effort would have been more profitable. The common excuse is that he is tired at the end of his day's labor and neglected to make the entries. This is too often the fact, but if a few minutes less time were devoted to farm work each day and some short notations made the profits would in many cases be much more. The technical knowledge necessary for farm bookkeeping is often largely overestimated as complex methods are not needed and are not the most successful.

In beginning, an inventory of the present value of land, live stock, farm implements, feed, seed, unsold parts of crops which have been gathered, cash on hand and any other items which may be used in the particular line should be made. This need not be entered in the day book in common use but can be kept in another book for the private information of the owner.

The accounts can be kept as a memorandum and then posted to the proper ledger page or, if the transactions are few, can be entered directly in their proper accounts. It is best not to attempt a complicated system at the beginning but make the accounts complete enough to show the cost of production in the various undertakings, whether the growing of grain, the feeding of hogs and cattle or the growing of oranges. Labor of men and teams or tractors is one of the principal items of cost in farming but is seldom taken into account when the farmer's own time is given. By the plan of entering the transaction directly in the account the proper distribution of labor cost can be made with little trouble.

By keeping cost accounts the farmer can tell whether crops which would have paid a profit if sold at time of harvest have been turned into a loss by being fed to unprofitable live stock. He can also tell whether more or less irrigation water paid a profit and whether extra cultivation was profit or loss and in this way avoid future unprofitable work.

Many other accounts will suggest themselves after the habit of making daily entries is acquired and the satisfaction of knowing instead of guessing as to profits will be such that the guessing will never again be adopted. Red ink rulings and clean writing look well but are not so necessary for profit as the knowledge of the cost of production.

Begin the new year by keeping a memorandum of the cost of production of one or two crops and see how much satisfaction it will give.—J. B. N.

CAR WINDOW NOTES

Wonderful how much of Painted Desert, Pictured Rocks, plains scenery and cinders can come through one car window—the same one looked out of last week.

A railway car is in "good form" now. Only a few days since a modest little gentleman, commander of the world's mightiest armies, sat in his railway car without staff and almost without attendants and heard delegates of a nation, which had thrown honor to the winds hoping to conquer the world, beg for—not justice, but mercy.

So a railway car may now take place alongside a certain apple tree at Appomattox.

'Scuse me for rambling but honest to goodness you can't help but think of a lot of things of which a car window reminds.

Now, I've never seen the City of Washington. But the first thing next Wednesday morning when I get there, I want to hunt up the man who called it the City of Magnificent Distances. "Magnificent Distances" is simply outdistanced by these Staked Plains. "Llano Estacado," mused another passenger this morning while I was shaving. I looked—three looks and still I couldn't see the horizon. The firmament furnished the only boundaries of Llano Estacado.

The shadows are now lengthening at the other end of the day. The train has been measuring off magnificent distance after magnificent distance; Llano Estacado in the Pan Handle of Texas is still coming in the car window. I want the coiner of "Magnificent Distances" to come and see.

Level as the floor, no tree, no bush, hardly a weed, occasionally a windmill, live stock here and there, a little town, or at least siding with stock corrals.

There is Texico and Texline on line between Texas and New Mexico. Texhoma up next Oklahoma. Then Bovina, Hereford and other beefy sounding names. Staked Plains have become steaked plains.

When I was a little kid (oh, it was some few years ago when they called me Bub instead of the modern kid) at the Little Red School House one of the class of big girls was accomplished in "speakin' a piece." The Deacon said she was "right peart." Her favorite was "Llano Estacado." I don't remember the idea of the "piece," but the dramatic, even tragic, way she hung onto that ca-ahdo still lingers. But this car window has her skinned a block—even a magnificent distance.

Look! There's a "Keep Off the Grass" sign. First of the day. Just grays and browns, excepting that one patch of green.

Perhaps that's what makes this great strip up and down the continent so distressing—just grays and browns.

Dark through Oklahoma but Kansas winter wheat fields greeted us in the morning. Look fine and some is high enough to pasture off before covering with snow.

Wonderfully black soil along Kaw bottoms.

Kansas City—American Royal Live Stock Show. Two hours between trains. Breakfast—taxi—20 minutes at show—wire to Cultivator—on to St. Louis, just across Missouri.

Farmers short of help for many corn fields still have the shocks of corn standing while the ground has been disked, wheat drilled as close to the shocks as possible. Too bad, but they are doing their best—till the boys come home.

"There's a chain pump! "What's a chain pump?" Ask Dad, who used to take the teakettle and thaw out the pump on a cold morning when he lived "back in the states." Also ask him to make a sound like it did on a hot summer day when after pulling up a cool drink the water went gurgling back down the wooden pipe around the chain—something like ch-ug, ugh, ug-h. "How dear to my heart is the chain pump of childhood."

Riddle: It floated in the window from the orange groves of San Bernardino, even from a little station within sight of Death Valley, from Northern Arizona and from a coal shoveler a Gallup. A cowboy of the Staked Plains gave it to me. Stock men going to the Royal and khaki boys had it. No, honest, the answer isn't "Spanish Flu." And tonight at the station dining room at St. Louis my petite waitress whose wavy black hair and snappy eyes indicated blood of Southern Europe gave my plate of hash and poached-on an extra whirl on the marble slab as she softly whistled—"Beautoful K—K—K—Katy."—C. B. M.

The Food Outlook at Home and Abroad

Just before Herbert Hoover sailed for Europe he called a conference of all state food administrators. At this meeting Mr. Hoover reviewed the world food conditions and indicated the necessary and probable policies resulting from the new order of things. Believing that the address will be of high interest to our readers, we publish the following extracts.—Editor.

WE HAVE now to consider a new world situation in food. We have to frankly survey Europe, a Europe of which a large part is either in ruins or in social conflagration; a Europe with degenerated soils and depleted herds; a Europe with the whole of its population on rations or varying degrees of privation and large numbers who have been under the German heel actually starving. The group of gamblers in human life who have done this thing are now in cowardly flight, leaving anarchy and famine to millions of helpless people. We have also to survey the situation in the exporting nations of the world, to see what can be done to redeem this mass of humanity back to health and to social order. Up to the collapse of the Germans the world that is allied against Germany has depended upon the North American continent for the margins of food that maintain their strength against the common enemy. The loss of shipping and the increased demands for transportation of our ever growing army have isolated the stores of food in the southern hemisphere and the Far East. Within 30 or 60 days the world should begin to release cargo ships from military duty and to send them farther afield for food, and before the next harvest arrives the entire world's food supply should be accessible. On the other hand, the cessation of hostilities will create an enormously increased demand for food, and we must be deeply concerned that the starving millions who have been liberated from the German yoke shall have such supplies as will enable them to return to health and prosperity. The war has been brought to an end in no small measure by starvation itself, and it cannot be our business to maintain starvation after peace.

All these considerations must change our domestic food policies, and this opens to us, as a nation, an obligation and an opportunity of service.

We must now take an account of the whole food resources of the world and we must take an account of the total demands. We must consider carefully how this situation reacts upon our people. We must consider our national duty in the matter and we must make such changes in our policies as are fitting to the new situation. We have thus a new orientation of the whole food problem and it is an orientation that affects every one of the great groups of commodities in a different manner.

It has been part of the duty of the food administration to keep informed as to the situation in world supplies. The matter of prime interest to us is how much of each commodity the exporting countries can furnish between now and next harvest and how much is necessary to the importing countries in which we have a vital interest, in order to maintain health and public order in the world.

World's Food Balance Sheet

We have computed the export countries' supplies on the basis of the avoidance of waste and we have assumed for the importing countries stringent war consumptions with additions such as we consider will preserve health and order. In these circumstances we make the world's balance sheet in the different great groups of commodities approximately as follows until next harvest:

Wheat and rye, sufficient supplies with economy in consumption; high protein feeds (for dairy animals), a shortage of about 3,000,000 tons; other feeds, sufficient supplies with economy in consumption; beans, peas and rice, sufficient supplies with economy in consumption; pork products, dairy products, vegetable oils, a shortage of about three billion pounds; beef, sufficient supplies to load all refrigerating ships' capacity; sugar, sufficient supplies for our normal consumption if other nations retain their present short rations, a shortage if they increase their rations; coffee, a surplus.

Of all these foods, except possibly protein feeds, we have a sufficiency for our own people and in many of them large surpluses. Of the world total to produce the above results, we are estimating North America will furnish rather more than 60 per cent and that the United States, including the West Indies, will be in position to furnish a total of about 20,000,000 tons of food of all kinds for export against our pre-European war exports of say 6,000,000 tons.

Calculations of this order are vitally necessary if we are to intelligently guide the policies in the United States. On the other hand, all such calculations are based upon assumptions as to transportaion, production and consumption which may be subject to great disturbance and distortion during the reconstruction period. For the present we can accept and rightly guide ourselves by these conclusions, and we may examine in more detail the position of each group.

In the matter of wheat and rye, the large supplies that have accumulated in the Argentine, Australia and other inaccessible markets appear to us to supplement the stores of clear wheat bread for the world. It will, however, require a continued high percentage of milling with continuous economy in consumption and the elimination of waste. Here directly arises a change in our policies, for we are able from now on to abandon the use of substitutes in our wheat loaf. The world's supply of wheat at this juncture is a priceless blessing, for, while bread comprises but 25 per cent of our national diet, the food of Europe is from 50 to 60 per cent sheer bread. The large harvest that we have here this year is to a large degree the result of the guaranteed price and we may rightly be proud that our production and conservation policies have provided the necessary margins to the world, of its daily bread.

Shortage of High Protein Feeds

We can export, together with other surplus countries, an apparent sufficiency of the coarse grains for feeding purposes, that is, of oats, barley and corn. On the other hand, there is a world shortage of high protein feeds, that is the wheat feeds, the seed and bean meals, upon which the dairy production of the world, and particularly of Europe, so considerably depend. This shortage extends to the United States and, in our case, is due largely to the necessary diversion of cottonseed meal to use as fertilizers and, to some degree, to our shortage in wheat millfeeds, due to our hitherto reduced use of wheat flour. This latter will be somewhat corrected by the elimination of substitutes in our bread. Thus the change in world conditons should somewhat ameliorate our dairy feed situation.

Not Enough Fats

The shortage in protein feeds directly contributes to the world's shortage in the supply of fats. If we examine the position of the dairy products and the vegetable oils, we find that in every item there is a shortage in the needed supplies for the whole world, although we are estimating with economy the export possibilities of the United States in all these products at over four billion pounds, of which from three to three and one-half billion comprise pork products. This world fat shortage is due primarily to the fact that Europe has been steadily underfeeding its dairy herds, has made steady inroads into its herds of hogs during the war and to the fact that there has been a great degeneration in the production of vegetable oils in certain regions, owing to the inability to secure shipping.

Of our export possibilities in fats, the largest item is pork products. Here again we have a right to congratulate ourselves as to the policies pursued in the administration of food

Contained on Page 551.

How the Boys Helped in the Salt River Valley

Written for California Cultivator by M. E. Bemis

READERS of the Cultivator will remember that the boys of the Salt River Valley were organized into a Boys' Work Reserve for farm work last year. It will be remembered that most of the work done was in hoeing cotton. Movable camps were used, and 129 boys, many of whom had never worked on farms before, were enrolled and did good work, earning a total of $7670.45.

This year the plan was changed somewhat, not that last year's work was not successful, but in order to enable many of the boys to work at home and other boys to work on farms where it would have been impossible to establish camps, and at the same time enable credits to be obtained for work done. Accordingly 123 of the boys enrolled this season and did prescribed work on farms. This work was under the general direction of Linn B. Orme, state director of the Boys' Work Reserve, and under the supervision of Professor F. C. Johnson, county director and instructor in agriculture in the Phoenix Union high school.

Most of the boys were high school boys, some from each of the four high schools of the county. Doing the prescribed work in a satisfactory manner enabled them to earn credits in agricultural studies. This plan was considered highly successful. The supervision of the agricultural instructor furnished just the stimulus needed to keep up the enthusiasm of the boys, whether working on their own home farm or as hired hands. A careful account was kept of each boy's work, and at the end of the vacation period it was found that the 123 boys had earned $18,188.

Besides these boys, who did regular farm work of various kinds, there were some that for one reason and another perferred camp life. Accordingly arrangements were made with the Salt River Valley Water Users' Association to take over a certain portion of the canals and laterals. A permanent camp was established a few miles from Mesa, and a total of 135 miles of canals and laterals was cleared of the vegetation that grows so rapidly along the irrigation canals.

There were 30 boys in the camp at all times, a total of 50 different boys being employed in such a way as to enable all to have short vacations and at the same time maintaining the full camp capacity at all times. This camp was maintained continuously from June 3 to August 31, a period of 13 weeks.

Cleaning up after the weeds have been cut.

Semi-military instruction was given daily, certain evenings were given over regularly to games, swimming, military drill or a trip to town to a moving picture show once a week.

An automobile was converted into a truck so that all the boys could be transported from their work to the camp or for the occasional trips to town.

This camp life with good wholesome food, regular work, not beyond their ability, just the right amount of amusement and recreation, combined with military drills and regular hours, together with the incentive of $1.70 clear for each boy every day he worked and the knowledge that each was helping to his utmost in replacing the much needed man power of the country, combined to make the work of the Boys' Work Reserve for 1918 highly successful.

Agricultural News Notes of the Pacific Coast

Northern California

Colusa County's rice crop is nearly harvested.

Salmon are now runing heavily in the Feather River.

Olive packers at Oroville report fruit running to large sizes.

A big crop of celery is being shipped from Staten Island near Rio Vista.

An experimental planting of broom corn near Yuba City brought a good crop.

The Butte County Citrus Association is now making carload shipments of oranges.

The Yuba County farm bureau is interesting itself in plans for irrigation extension.

The cow testing department of the Sacramento County farm bureau is testing 900 cows.

Lassen County reports its first heavy snowfall. The roads were blocked over the mountains.

The quarterly meeting of the Hayward Poultry Producers Association, scheduled for this month, has been called off.

Shipments of late cling peaches from Pleasant Valley, Nevada County, have brought $3.00 per box on the Chicago market.

Drying plants at Wheatland, Yuba County, have decided to continue work throughout the winter. This will give employment to 300 people.

Tuolumne County is fighting San Francisco power companies who propose to develop storage reservoirs along the Stanislaus River.

The potato committee of the El Dorado County farm bureau has adopted standardization rules and formulated buying and selling agreements.

A number of rice growers at Chico, Butte County, have gotten together for the purpose of erecting a rice warehouse to hold 200,000 sacks.

Rice growers who have been piling sacks of rice along the state highway have been warned by the state highway commission to remove them.

Celery shippers at Antioch, Contra Costa County, are getting good prices, several of them reporting 50 cents a dozen, double the ordinary price.

The postponed annual meeting of the Sacramento County farm bureau is now planned for early in December at the University farm at Davis.

The early rains have brought up such a heavy growth of grass that many grain farmers in Shasta County report difficulty in turning it under.

The California International Live Stock Show has moved its date ahead until February 23. This because of the uncertainty of influenza quarantine.

Twelve hundred acres of cotton at Chico is now being harvested. Fifteen varieties are planted in this one tract to find what would be best suited for future growing.

A. L. Cowell, secretary of the Irrigation District of Association of California, has issued an urgent call for a conference of the districts to be held November 30 at Colusa or Willows. The district will ask modification of the federal house bill which includes irrigation taxes as non-deductible income. It is claimed that new bonds will be reluctantly voted if collections for their payment are made subject to federal taxes.

Central California

Bakersfield expects to have a new cotton seed oil mill.

The highway from Tipton to Tulare is now open for travel.

Tulare County orauge growers have had considerable difficulty in securing enough pickers.

The Kern County farm bureau is planning to hold open air meetings at its local centers.

The government has sent out notice that no more peach pits will be needed for making charcoal for gas masks.

The Santa Cruz County farm bureau has postponed its annual meeting until after the influenza situation is cleared up.

Orange growers of Porterville expect to avail themselves of the work of school children during the picking season.

The raisin growers request to the food administration for a raise in price for Thompson Seedless raisins has been denied.

Farm bureau auction sales are scheduled for December 3 at Kearney Ranch, Fresno; 4, Hanford; 5, Tulare; 11, Visalia; 18, Hanford; 19, Tulare; 20, Corcoran; 26, Visalia.

The marketing department of the Kern County farm bureau will hold two farm bureau auction sales of fat hogs and miscellaneous goods during December, at Wasco on the 7th and at McFarland on the 14th.

A meeting of the farmers' organizations of the county was held at San Jose last Tuesday to discuss the labor situation. Report was made of the work of the employment bureau conducted for the organizations last season.

Temporary injunctions have been granted to the California Associated Olive Growers' Association to compel delivery of fruit by members to association packing houses. High prices have caused some defections from the association ranks.

Local meetings of the San Joaquin County farm bureau are announced at Lafayette, December 2; Farmington, 4; Lavella, 6; Lockeford, 9; Linden, 11; Douglass, 12; Tracy, 13; Escalon, 16; Ripon, at San Joaquin school, 19; Manteca, 20; Live Oak, 23.

The sugar factory at Spreckels, Monterey County, announces its sugar beet price next season will be $10 per ton for beets averaging 15 per cent; 60 cents per ton for each one per cent increase; also reduction of 60 cents for each one per cent below 15. This is a material increase over last year's prices.

The Lindsay Gazette says: "From the orange testing station here at Lindsay, in charge of the county, and as well from the producers and packing houses, comes the good word that the oranges are the best ever this year. In fact it is said to be a phenomenal year, eclipsing anything ever known in this valley."

The Coastal Inter-Counties Good Roads Association, comprising the counties of San Luis Obispo, Ventura, Santa Barbara and Monterey, was launched at San Luis Obispo September 5 at a meeting of delegates from all of the counties, arranged by the San Luis Obispo Chamber of Commerce. Temporary officers selected were: George Wight, of Santa Barbara Chamber of Commerce, chairman; and Avon Brown of Ventura.

Southern California

Early cauliflower in Southern California is maturing slowly.

Orange County sugar beet farmers are signing up 1919 contracts.

Hemet estimates 120 tons of walnuts as her output this season.

Imperial Valley will have 10,000 acres of cantaloupes this season.

Yucaipa Valley's apple yield this season has amounted to 125,000 boxes.

First shipments of Imperial Valley cauliflower have been made to Los Angeles.

The Hemet-San Jacinto Olive Growers' Association has packed 12 carloads of olives.

Casaba melons will be shipped out from Los Angeles County until the middle of January.

Riverside County has established a home garden bureau with Horticultural Commissioner Sharp as chairman.

Orange County high school boys took advantage of the influenza vacation and aided in the harvesting of sugar beets and castor beans.

Indio's date packing house is now receiving dates in lug boxes and ripening the fruit in "hot box." The heat is generated by electricity.

The Sierra Vista Packing Company at Riverside has shipped out 100 carloads of fruit and it expects to send out about 200 more this season.

Several hundred acres of cabbage have already been planted in Imperial Valley. The crop will mature in time for the late winter and early spring trade.

The annual meeting of Los Angeles County farm bureau is now announced for December 19. This meeting has been twice postponed because of the influenza epidemic.

The federal food administration has released for sale to the general trade standard packed tomatoes held for government use at many canneries in Southern California.

Cantaloupe growers in the Imperial Valley have asked for an increase in the guarantee of $1 a crate from the distributors. This is a jump from 80 cents a crate last year.

Los Angeles is one of the best casaba markets in the country. It is quite a common thing during the height of the shipping season for Los Angeles consumers to eat from three to five carloads a day.

Bruce Drummond, in charge of the government date gardens at Indio, has been experimenting with dehydrating certain soft and syrupy dates which have proven poor keepers when shipped to market. They are being tested by shipment to the army in France.

The office of the county home demonstration agent at Riverside has been made headquarters for the women of Riverside County. They are invited to hold meetings and keep appointments in this place. This office is a part of the farm bureau office and is on Ninth Street.

The Brawley News is calling attention to San Francisco prices on milo and other sorghum grains and to the fact that the freight rate from the Imperial Valley is $9.10 per ton and appeals to the growers to secure full values from buyers who are allowed a profit of only $2.00 per ton.

The Coast and General

Colorado Pinto beans are bringing $6.00 to growers.

Hood River apple growers are getting $12 a ton for canning apples.

The federal government has removed all restrictions on building operations.

Spokane and Yakima apple districts report slow sales, and those are of fancy fruit.

The Medford irrigation district of Oregon has voted a million and a half for extension work.

The almond crop of Greece this year will amount to about three and a half million pounds.

Oregon growers of Tokay grapes are this season for the first time, making commercial shipments.

American buyers have secured one hundred thousand dollars worth of Canary Island onion seed.

Colorado and New Mexico have nearly doubled their Pinto bean crop over last year's production.

Apples are being shipped out from the Hood River section of Oregon at the rate of 15 carloads a day.

The "more cottage cheese" campaign is to be taken up by the United States dairy bureau in Arizona.

The food administration has announced that it will make no contracts for the 1918 crop of Pinto beans.

The Southwest Washington Improvement Conference will be held at Chehalis, Washington, November 9-13.

The United States burns about 3,800,000 tons of limestone each year. California's production is only 80,000 tons.

Market gardeners of Colorado are organizing an association which may affiliate with the Vegetable Growers Association of America.

Water users of the Okanogan government irrigation project are contemplating organizing an irrigation district under the state law.

The National Association of County Agricultural Agents of the United States has called a national conference at Chicago in December.

A reduction of 25 per cent on freight rates has been made for shipment of cattle from drouth stricken areas of the Southwest to Eastern points.

Reconstruction problems are to be considered at a conference called at Atlantic City, December 3-6, by the United States Chamber of Commerce.

The Northwest Livestock Show is being held at Lewiston, Idaho, November 28 to December 4. The Pacific International will be held at Portland, Oregon, December 9-14.

Investigation in Lincoln County, Washington, found average wheat yields running from 6.43 bushels to 14.44 bushels per acre. The Early Baart and Marquis proved highest bearers.

The annual meeting of the Colorado State Dairymen's Association will be held at Fort Collins, December 10 and 11. At the same time the Colorado Farmers and Farm Women's Congress will hold sessions.

Money loaned by federal government to Kansas wheat growers has resulted in the planting of over a half million acres to wheat; 3200 applications were made for these seed wheat loans. The total loaned aggregated $860,000.

Home Pickling of Olives

By W. V. Cruess

MANY of us have an olive tree or two in the back yard or we live near an olive producing section. In either case we can readily obtain enough olives to make it worth while to pickle them for home use or for sale to the neighbors. If we have such olives available we should pickle them, not only because they make a most excellent relish but because they have much food value, and saving food is probably one of the most patriotic duties that we can perform during the next year. The war is over, but we still have Mr. Hoover's administration with us, and very properly so.

Principles of Olive Pickling

We can put up the olives in several ways. The most popular way is as the California ripe olive. We can also pickle them as green olives or as Greek olives. We shall consider the ripe olive method first.

The olive, as many a newcomer to California learns, is intensely bitter as it comes from the tree. Most of the processes of pickling have to do with the removal of the bitterness. The bitter principle is destroyed by the action of lye. The lye treatment, therefore, is the first step in the process. However, if we use the lye long enough to completely remove the bitterness in one treatment we shall remove practically all of the color and a white or yellow olive results. The lye seems to dissolve color as well as bitterness.

But if we use the lye a short time only and then expose the treated olives to the air for several days the color will return, and when it has returned in this way it is permanent, and no matter how much lye treatment we then give the olives, the color remains.

After exposure to the air there will still be a small amount of bitterness. This is removed by a second lye treatment. Ordinarily the second lye is somewhat weaker than the first solution.

After the second lye treatment the olives will have no bitterness, but will be saturated with the lye solution, which will make them inedible unless removed. The lye is very soluble in water. Therefore the next process consists in washing out the lye with water. This must be done carefully to avoid loss of the olives through softening. The softening is caused by bacteria, but is very easily avoided if the water is changed often during washing.

The final step in the process is sterilization. Olives will keep only a few weeks unless they are heavily salted or are sterilized in hermetically sealed jars or cans by heat. The sterilization method is almost exclusively used instead of salting. Olives are more difficult to sterilize than other fruits but not nearly so difficult as string beans or peas. Sterilization can be carried out in a wash boiler just as effectively as in the most expensive patent sterilizer.

The practical application of the above principles is given in the following recipe.

Recipe for Ripe Olive Pickling

Choose olives that are black, red, or have at least begun to show some pinkish or light red color. Overripe olives will be soft; underripe olives will be tough and tasteless. Pick them carefully, avoiding bruising. Shallow boxes are better than deep ones.

The olives should be pickled within two or three days after picking. If they are to be held for a week place them in a barrel or large pot and cover with cold water. Change the water daily. If they are to be kept longer than a week, make a brine of six ounces of salt per gallon of water and store the olives in this until they are to be pickled. They will keep several weeks in such a solution.

First Lye

Place the olives in stoneware jars or in wooden open barrels, agate ware pots or in a wooden tub. Under no circumstances should a galvanized or tin container be used; poisoning might result from the solution of tin or zinc

To make the lye solution first obtain a pound or two of Babbitt's Lye or Greenbank's Lye or Red Seal Lye or any other reliable brand from the grocer. For each gallon of lye solution to be made weigh out three ounces of lye. This corresponds to one pound of lye per five gallons of water. The writer has found it more convenient to make up this quantity rather than to try to weigh out three ounces of lye on the kitchen scale. Three ounces of lye is roughly five level tablespoons of the dry granular lye. Use level tablespoon in measuring by this method.

When the lye is well dissolved and well mixed, pour it over the olives, covering them completely. Stir them every half hour in order that the lye may act evenly.

Leave them in the lye until the lye has penetrated about 1/16 of an inch into the flesh or until it has "cut" through the skins of all the olives. About once each half hour remove several olives and cut one or two with a sharp knife. The flesh will be turned yellowish or discolored to the depth to which the lye has penetrated. Under ordinary conditions three hours will be sufficient time; but the time will be shorter than this if the weather is hot or the solution is warm; and longer if the solution is cold. The lye should not be allowed to penetrate more than one-half the distance from the skin to the pit; one-fourth the way to the pit is the usual distance. Too deep penetration results in loss of color.

Exposure to Air

When the lye has penetrated as above, pour off the lye solution. The lye may be saved and used for the second treatment. Leave the olives exposed in the air until they have assumed a good black color. Stir them at least twice each day. This can be done by pouring them from one jar or pot to another. Unless they are stirred frequently the color will be spotted. Usually three days will be sufficient time to permit coloring; some olives require less time; others may require four or five days.

Second Lye

When the olives have acquired the desired amount of color, prepare a lye solution of one and a half ounces of lye per gallon, that is one-half pound of lye per five gallons of water. Color the olives with this solution. If one wishes to be economical with the lye, the lye used for the first treatment of the olives may be returned to them.

Allow the lye to remain upon the olives until the lye has reached the pits of the olives. This can be determined by removing a sample occasionally and cutting it to the pit. The progress of the lye will be evidenced by discoloring of the flesh. It will require about eight hours under ordinary conditions for the lye to reach the pit of the olives. If the lye does not reach the pits the olives will remain bitter; little harm will be done if the lye is left upon the olives several hours after it has reached the pits.

Removal of Lye

When the lye has reached the pits of the olives remove it and cover the olives with cold water. Stir the olives once every two or three hours during the day. Change the water at least twice each day; for example night and morning. Three changes per day will give better results. Continue this process until all of the lye has been removed. This will usually require about six or seven days. By tasting the olives once each day the final disappearance of the lye is easily determined.

Sterilizing

When all of the lye has been removed by the wash water the olives are ready for canning or putting up in jars.

Prepare a brine of five ounces of salt per gallon of water or of one pound of salt per three gallons of water.

Pack the olives into glass jars or wax top cans. Prepare the wash boiler sterilizer by placing a false wooden or wire screen bottom in it, adding three or four inches of water, and heating the water to nearly boiling.

Heat the brine to boiling and fill the jars or cans of olives with the boiling hot brine. Place the jars or cans in the boiler at once and cover them with scalded rubbers and caps. If wax top cans are used, simply place the tin caps on the cans but do not add wax. Heat the water in the boiler to boiling and then continue the boiling for one hour with the lid placed tightly on the boiler.

After one hour at the boiling point, remove the jars or cans and seal them at once. If cans are used seal the caps with sealing wax as soon as they are removed from the sterilizer. The lids of Mason and glass top jars are tightened and the jars turned upside down to cool. Economy jars are left in an upright position, the only precaution necessary being to ascertain whether the lids are resting evenly upon the tops.

Storage. Store the olives in a dark closet or wrap the jars in several thicknesses of paper if they are stored in a light room. Light causes the color to fade.

The olives will keep indefinitely and can be used at any time. Apparently canned olives are a safe food because there are no cases on record of "ptomaine poisoning" from them.

Pickling Green Olives

Picking: Olives of the Sevillano (Queen) variety, because of their large size are preferred for green pickling. However, any variety can be used. The olives should be full size but still hard and green. Avoid bruising in picking.

Lye Treatment: Only one lye treatment is necessary for green olives. Prepare a lye solution of three ounces of lye per gallon of water. Place the olives in any sort of container at hand except one made of galvanized iron or of tin. Wooden containers or stoneware crocks are best.

Leave the lye upon the olives until it has reached the pits. This will usually require about 12 hours' treatment; for example, treatment overnight. Cut several olives to be sure that the lye has penetrated to the pits. It will discolor the flesh of the olive to the depth penetrated.

Washing: When the lye has reached the pits place the olives in cold water and discard the lye. Change the water at least twice daily until all of the lye perceptible to the taste has been removed.

One week's washing in this way will usually be sufficient to remove the last trace of lye.

Brining and Fermentation: Prepare a brine consisting of nine ounces of salt per gallon of water. Place the olives in a wooden keg or if this is not on hand place them in glass top fruit jars. Fill the keg or jars with the brine and seal them. The containers should be filled to overflowing before sealing; air is detrimental to the color. In making green pickles we aim to keep the olives green in color; should we have air present or should we expose them to the air they will become gray or brown in color. The changes that give green olives their desirable flavor can only take place in the absence of air. Therefore there are two good reasons for excluding the air.

Store the olives for about two months before use. They will during that time develop a mild acid flavor characteristic of the green olive of commerce. No sterilization is necessary.

If a keg is used the olives should be transferred to bottles or jars after they have reached the proper flavor. Glass top and not Mason jars should be used because the brine and acid will act upon the zinc tops of Mason jars and cause the olives to absorb dangerous amounts of zinc.

Greek Olives

Natives of the Mediterranean region prefer olives that have been cured by the Greek or salt process. No lye is used. The bitterness is partially removed by the action of salt and enough of the moisture is extracted by the salt to cause them to keep well.

Salting: Use only very ripe fruit. For each pound of olives weigh out one-third pound of table or fine dairy salt. Take a box with tight sides and bore several holes in the bottom of it. Place it where brine drippings will not cause any damage to floors. Place a layer of salt about one inch deep in the bottom of the box. Mix the olives and salt thoroughly in the ratio of one pound of salt to three pounds of olives; that is one-third pound of salt per pound of olives. Then place them in the box and cover them with about one inch of salt.

Leave them until most of the bitterness has disappeared. About three weeks' treatment, or in some cases four weeks, will be required. During this time the olives are not disturbed.

Storing: When most of the moisture and bitterness have been extracted from the olives remove them from the salt and separate the salt from them as completely as possible. This can be done by shaking them upon a screen or by placing them upon a screen and brushing them with a coarse brush.

When most of the salt has been removed dip the olives in olive oil and allow them to drain. Pack them in pasteboard boxes or loosely covered jars.

Olives of this type will have a slightly bitter flavor and more of the natural olive flavor than will olives pickled according to other processes described above. Most native born Americans find it necessary to develop a taste for them, but once the taste is developed they will usually be preferred to olives pickled in the usual California way. They contain considerably more food value than olives pickled in the usual way. One would expect them to be very salty, but such is not the case, because the salt seems to extract the water rather than to penetrate the fruit.

Development of Neighbors' Cooperative Group in Citrus Industry

Written for California Cultivator By J. Claude Wilson

"NO MAN can live unto himself" may seem a kind of gospel flight into the air at an altitude too high for the ordinary ten-acre citrus grower to apply to his own economic condition. Even some of the smaller men with only five or six acres have been rather puffed up with the thought that they were able to make a living without any of these new fangled cooperative ideas that the universities and impractical theorists were preaching at us. They like to be "independent" —which means that they prefer to live in a fool's paradise of ingratitude to their benefactors—dead and living—who had freely given to the industry the fruits of their years of sacrifice and study and experience.

Economic pressure is a very unpoetic missionary, but he carries the goods, and he has a very forcible style of argument. It is this missionary that will have to convert many of our hard headed, myopic growers who boast of their dearth of sentiment. This economic pressure rather forcibly suggested the idea of cooperation to the older growers when the returns on their groves were reduced to the vanishing point by one-sided conditions of the sale of their oranges and lemons at this end and by unorganized markets at the other end. They swallowed their independence and joined up with their neighbors to form the California Fruit Growers Exchange, making savings all along the line and incidentally stabilizing the value of citrus land in California.

Economic pressure in the shape of high price of feed has now been the prosaic missionary suggesting that it is wasteful and stupid to own and feed a team for the five or ten acre owner when, by a little mutual arrangement and foresight one team could keep twenty to forty acres in "a good state of cultivation." This, however, will only be a temporary unit of acreage.

Economic pressure again is using his logic to show that the scarcity and high wages of labor combined with the increased acreage coming into the market, make it advisable for him to sell his team and combine with his neighbors in the purchase of a community tractor. By a little figuring a group could determine how much acreage would be the best economic unit, and mutually arrange for the group purchase of a tractor and implements. At present the writer lives in a community where we have several groups with cooperative teams. The cooperative tractor should be an easy evolution.

The citrus industry is more highly organized than most agricultural pursuits. It lends itself to specialization, being specialized in itself. Thus we employ specialists for pruning, for irrigation, for fumigation, etc. As a result orange or lemon growing can be conducted by the man with less native experience who has enough capital and some business intelligence. The returns are more stable than in many other crops and more directly under his own special supervision. With the growth of the cooperative spirit the existing channels of information should be more accessible and reach more easily the smaller grower. With increased membership in our local farm bureaus, we would be better organized to get increased benefit from the various specialists connected with the universities. There is no difficulty or problem connected with the citrus industry that has not its specialist and investigator.

Thus the small grower is in as good a position as the richest corporation to command the services of the best brains in the industry. This, of course, is the result of cooperation on the largest scale. But to get the maximum of benefit from this happy state of things it is advisable to encourage any and all local organizations that tend to bring the growers together.

The next development of cooperation in the citrus industry seems to me the community or neighbors' unit—a group of growers conveniently situated in relation to each other mutually combining for convenience and economy to work their groves as a whole, with a secretary and treasurer amongst themselves, and all the members forming a committee of management. Thus their groves could be worked by one tractor and one set of implements, their purchase of fertilizers and supplies could be made more economically; the general standard of their groves could be raised; borrowing for any group purpose (e. g., the initial one of a tractor) could be facilitated; and it would still leave the individual tastes and idiosyncrasies of each grower free to "do what he likes with his grove."

Preventing Spread of Walnut Worm

By G. H. Hecke, State Horticultural Commissioner

The walnut growers this year are somewhat concerned over the increased infestation of the walnut worm in some sections. This matter is now under investigation by the state commissioner of horticulture and while this investigation is not yet completed it has progressed sufficiently to justify the statement that any measures to prevent further spread of the insect must receive the hearty support of growers, packers and dealers. The worm emerges from the nuts about harvest time and a favorite spot for making the cocoon appears to be in sacks. It therefore seems probable that the first step toward restricting the spread of the walnut worm is to restrict the movement of walnut sacks. The present scarcity of sacks makes it desirable that any restrictions placed upon their movement be as lenient as is consistent with the safety of the industry. The answer to this problem of course is found in applying some disinfectant to walnut sacks which will be so effective, so simple of application and so cheap as to promote its general use.

Such a disinfectant is believed to be obtained by the use of heat. Many walnut packing houses in or near to infested districts are now equipped to apply heat to all walnut sacks before they are permitted to leave the premises. Dry heat by means of ovens is being used. Superheated steam makes an economical, quick and sure disinfectant and is practically a dry heat as it does not seriously moisten the sacks. Disinfection by dipping the sacks in boiling water is equally effective but has the disadvantage of requiring that the sacks be dried after treatment.

Every walnut packing house whether in an infested district or not should be equipped to disinfect walnut sacks before returning them to the growers. Such disinfection should be applied immediately before the actual delivery of the sacks to the grower to prevent their becoming reinfested.

NO MEXICAN FRUIT PESTS WANTED

The federal horticultural board recently published a warning to travelers from Mexico coming into the United States, explaining the heavy penalties against the unauthorized movement into this country of oranges and other fruits and certain vegetables. This regulation is intended to prevent the introduction of the Mexican fruit fly and the avocado weevil, both of which exist in Mexico and which could be inadvertently brought into the United States in fruit, etc., carried by travelers.

This same careful inspection and scrutiny to safeguard against the introduction of noxious pests in the personal effects of travelers has long been in vogue with the inspection quarantine service of the state horticultural commission at San Francisco. One might ask why anyone should desire to break the law, or why should anyone seek to endanger the horticultural interests of his native land. Nevertheless it is done, and it is done often, but the inspection and quarantine service long ago adopted the trite expression lately made famous by a French general, and we in California know "They shall not pass."

TENT CATERPILLAR CAUSES DEATH OF HOGS

Hogs have been killed by feeding on tent caterpillars in the Russian River Valley. Their stomachs, on dissection, were found to be completely filled with the silky material of the "tents" which had been formed into dense balls. The tenacity of these webs will be appreciated when it is understood that in colder sections the web or "tent" is capable of protecting the pest by excluding rain, dew and frost. Tent caterpillars have been especially destructive to prune orchards in this part of the state.

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THE FOOD OUTLOOK

Continued from Page 547

supplies in the United States by the department of agriculture and the food administration. If you consider that we have reasonable promise of ability through increased production and conservation to export seven times as much products as our pre-war average, and if you consider the vital importance of this extra contribution in fats in this new war against famine, we are justified today in our every act in the stimulation of production of this commodity. While we cannot supply the world's full deficiency, we have ameliorated it enormously.

As you will recollect, eighteen months ago, when we had to define our food policies, we stated that the only hope of a sufficient production of fats and meat for the world either in peace or war, lay in the stimulation of production of the American hog. In that direction we could obtain results in twelve months, whereas, in any other direction, years would be required for expansion of fat production. The American farmer has responded to a remarkable degree. In order to assure this change in agricultural courses we promised the farmer a fair return on his hogs, so far as our control of export orders gave us the power. It is our duty to make this undertaking good.

Yet, with all our supplies, the world will be far deficient in its normal supply of fats for two or three years at least. Our internal policy with regard to this group of commodities must therefore be one towards intensest economy in consumption if we are to carry out our high purpose of furnishing food to a famine stricken world.

Policies of conservation require great care and guidance. For instance, for the next 30 or 60 days there is barely enough shipping at our shores to take care of our current production of pork products, and our storage is deficient. Later on when ships are available, we will need call upon our people for great sacrifice. On the other hand, the shortage in our supply of dairy products is today so acute that we are compelled to now limit the export of this product. Dairy products are so vital to the protection of child life throughout the world that we should immediately reduce our unnecessarily large consumption of butter and condensed milk.

In the matter of beef, the world's supplies are limited to the capacity of the available refrigerating ships. The supplies of beef in Australia, the Argentine and the United States are sufficient to load these ships. There will be a shortage in the importing countries, but we cannot hope to expand exports materially for the next few months, in view of the bottle neck in transportation.

It is very difficult to forecast with any degree of accuracy the position in sugar. If Europe raises its ration very considerably, there will be a shortage.

Another prime necessity in the United States is that of coffee. Our computation of the world's coffee supply indicates to us that there is more than a sufficiency.

New Policies Outlined

This being the new world situation in food, created by the collapse of the war, the prime changes in our policies on today's outlook can be summarized:

That we may now advantageously abandon the use of substitutes in our wheat bread; that we will still require economy and elimination of waste in its consumption; that for the present we need conservation in butter and condensed milk; that ultimately we must extend this to all the fats. We can contemplate, at the most, maintaining fully three pounds per month of sugar per person of household sugar.

These are special features of changes in policy, but the shifting of conservation from one commodity to another is not the whole policy. There is one policy which cannot change, and that is the vital necessity to simple living; to economy in all consumption for commodities more or less substitutes for each other. We must realize that the spectre of famine abroad now haunts the abundance of our table at home.

Europe on Verge of Famine

There are conditions of famine in Europe that will be beyond our power to remedy. There are 40,000,000 people in North Russia to whom I fear but little access with food can be obtained this winter. Their transportation is demoralized in complete anarchy and shortly many of their ports will be frozen even if internal transport could be realized. I expect the most dreadful results of starvation beyond all human power to allay.

I am also leaving for Europe for a conference over another situation equally enlarged. From our findings there must arise details in organization to meet a much wider situation. There must be a feeding of the people who have been liberated from the German yoke. That feeding must be organized, and in order that we may get effective and prompt action from the United States the war department has now undertaken, at our suggestion, to largely divert their military tonnage to the transportation of food and the enlargement of the quartermaster's stores in Europe that we may have them immediately available.

At this moment Germany has not alone sucked the food and animals from all those masses of people she has dominated and left them starving, but she has left behind her a total wreckage of social institutions and this mass of people is now confronted with engulfment in absolute anarchy. If we value our own safety and the social organization of the world, if we value the preservation of civilization itself, we cannot sit idly by and see the growth of this cancer in the world's vitals. Famine is the mother of anarchy. From the inability of governments to secure food for their people, grows revolution and chaos. From an ability to supply their people grows stability of government and the defeat of anarchy. Did we put it on no higher plane than our interests in the protection of our institutions, we must bestir ourselves in solution of this problem. There are millions of people now liberated from the German yoke for whose interests we have fought and bled for the last eighteen months. We dare not neglect any measure which enables them to return to health, to self support and to their national life. This is the broad outlook of some kind of food administration during the next twelve months. As to what the detailed structure of our organization may be, to effect these ends, or even its actual name, can be developed from time to time to suit necessity, It will be months until formal peace, and in the meantime the organization must remain intact if we are to serve the high purposes that I have outlined. And after that we can decide our courses upon the basis of our national duty.

A NEW PEST MENACES GULF CITRUS GROWERS

The department of agriculture has established a research station in the Panama Canal Zone, owing to the known occurrence there and in Cuba of the black fly of citrus, which might inadvertently be introduced into gulf citrus groves.

LIGHTLESS NIGHT ORDER MODIFIED

New regulations partially removing present restrictions on the use of light to become effective Monday, November 18, and superseding all previous orders on the subject, were issued by Albert E. Schwabacher, federal fuel administrator for California. The new order prohibits the wasteful or extravagant use of light in streets, parks or other public places in any city, village or town.

The order permits the use of light every night in the week for illuminating advertisements, announcements or signs, for the external ornamentation of any building and for displaying shop windows or for other commercial or advertising uses. It also permits the use of light in show windows between sunrise and sunset.

Mr. Schabacher advises that the partial raising of lighting restrictions in this state is due to the improvement in the supply of water power in the mountains and a lessened demand by war industries for supplies of fuel.

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Written for California Cultivator by E. Ralph de Ong

Concluded

Grasshoppers

Grasshoppers have been discussed a great deal during the past season but it may be well to call attention to the possibility of checking their increase by deep fall or winter plowing of the ground when eggs have been deposited in large numbers. Poisoned baits should be distributed at these places as soon as the eggs have hatched in the spring and before the grasshoppers attain wings and scatter about. Early control work is cheaper than that late in the season and also avoids the loss to crops resulting from their feeding.

Bean and Pea Weevils

Bean and pea weevils live through the winter in the dry bean or pea, escaping in the early spring, usually April or May, to lay their eggs in the blooming plant or the green pods. Late plantings are much less subject to attack for the beetles are mostly dead before the host plant has bloomed. Infested stocks should never be stored near a field in which this crop is to be grown the following season for plants grown adjoining a house, where infested material is stored, and blooming at a time when the beetles are active, will often show 100 per cent infestation, while half a mile away scarcely a trace of the infestation will be found. In regions subject to weevil injury planting should be delayed until after the first of June, and in no case should weevily seed be used unless it has been fumigated.

In the overflow regions of the state where all beans are removed in the fall there is less danger than on higher land such as Modesto and Turlock.

The broad or horse bean is also subject to attack by a weevil but a species different from that feeding on the small varieties. Attacks by this weevil can also be lessened by late planting, but in the interior the hot weather checks development of late maturing plants, while on the coast the delayed crop is more subject to aphis injury. Hence it seems wiser to place dependence on thorough fumigation of all stocks and cleaning up the scattered beans with hogs. This weevil does not increase through the winter, therefore the killing of those present at threshing time is sufficient.

Red Spider

Red spider, Tetranychus telarius, causes serious injury to orchard and bean crops in the warmer regious of the state, the attack being similar to the work of thrips, but more severe. On beans and squash the attacked leaves turn pale and dry up, and may result in the death of the plant. This species of red spider lives through the winter in a dormant condition, hiding in leaves or on underground stems during the coolest weather. In open winters it may be found on the under side of morning glory, malva, sow thistle and wild blackberry. These plants should be kept down through the winter and early spring in fields where crops are to be grown through the summer which are subject to attack by this pest.

Tuber Moth

Tuber moth is our most serious potato pest in many parts of the state. The larva of this moth attacks the potato, tomato and egg plant, first as a leaf miner and later feeds on the tuber or fleshy stalk. These larvae remain in the tuber throughout the winter, so that infested stocks should be fumigated in the fall and especially before planting. Injured and small potatoes left in the field should be cleaned up by sheep or hogs. Our native plant, nightshade, is also a host of this insect and should not be allowed to grow through the winter as it serves to carry the insect over from one crop to the next. Tomatoes and egg plant should not follow potatoes where the moth has been abundant as both of these crops are attacked more or less when the insect is abundant.

Flea Beetle

Flea beetles feed on the potato foliage in the adult stage and the larvae on the tuber, causing a pimply appearance on the latter. The insect sometimes becomes very abundant in gardens or truck land where potatoes are grown continuously. The tiny brown beetles are often very abundant on the foliage but are so small as to attract little attention unless it be from the irregular holes eaten in the leaves. When disturbed they jump or fly in a very active way, hence their name. The flea beetle commonly attacking potatoes, feeds on almost every other vegetable grown, so that infested land should be planted to onions or grain for one or two season until the beetles have decreased.

ORCHARD AND VINEYARD

Our orchardists are usually quite careful to keep up their winter control, but occasionally someone neglects the application of lime-sulphur or a crude oil spray to control the scale and twig borers. Oil sprays are also of some value in killing the winter egg of the red spider, Bryobia pratensis, leaf rollers and tent caterpillars. The crude oil spray is applied most safely after the buds are slightly swollen in the spring.

Canker Work

Canker work should be checked either by fall banding of the trees or an early application of lead arsenate, the latter should not be used in showery weather as danger to the foliage may result.

Borers

Both the crown and the flatheaded ones should be removed during the fall and winter as well as any weakened or dead wood that has been attacked by shothole borers.

Aphids

Aphids or plant lice on apple, cherry and plum should receive an early application of nicotine sulphate and soap or incorporate the nicotine into the scab spray of lime-sulphur.

Leaf Hoppers

Leaf hoppers may be found overwintering in the grass, weeds and trash, hence the cleaner a vineyard is kept the less adults will be present the following spring, so that it is a choice between plowing or "sheeping off" the ground in the fall or having a large number of leaf hoppers in the spring.

GARDEN

Squash Bugs

Squash bugs are the bane of the gardener and truck grower. They come in swarms in the late summer and fall, attacking every variety of squash, pumpkin, and even melon vines, and once they are established in a field they are extremely difficult to control. No spray is very effective against them, unless used so strong it will injure the plants. Our hope is in destroying as many overwintering adults as possible, for there is usually but one brood a year with a possible second late in the fall; those which we find in early summer have lived since the previous year.

The fields when the squash bugs have been abundant should be plowed in the fall, turning under all trash and destroying all trash piles or rubbish where they might hibernate. Hand picking may be resorted to when the first individuals appear, the bugs being dropped into a bottle of water with a film of oil on the surface. The dark brown eggs, found on the under sides of the leaves, should also be destroyed. Kerosene emulsion sprayed on the young bugs will kill many of them but this is dangerous to the vine. Trap crops of squash may be planted in the melon field and when attacked sprayed with pure kerosene.

Harlequin Cabbage Bug

This is found throughout the state except in the north end. They attack cabbage, cauliflower, brussels sprouts and a few other plants. Unlike the squash bug, they breed throughout the summer. This insect is also very difficult to control and sprays are largely ineffective. The adults overwinter on kale, mustard and other crucifera, hence all volunteer plants and old stalks should be destroyed in the fall. Kale may be used as a trap crop

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to protect cabbage and cauliflower, as the former seems more attractive than the latter. After the bugs congregate on the kale it is sprinkled with kerosene which of course kills the plant as well as the bugs.

Aphis

Aphis or plant lice usually live through the winter on volunteer plants such as mustard, vetch, wild radish and old vegetable stalks in the garden. Consult your county horticultural officers as to what plants may be alternate hosts for aphids attacking your garden and then destroy all such plants which may be in the garden. The cabbage and cauliflower aphid commonly winters on mustard and radish, if no garden crop is available, hence this should always be destroyed.

Cabbage worms may be found throughout the winter except in the colder parts of the state. Cabbage and cauliflower planted early in the fall are very liable to attack as they have the benefit of the summer's increase in the number of butterflies and worms. Young plants may be sprayed with lead arsenate and soap, old cabbage stalks should be destroyed as pupae will often be found attached to them.

Getting Rid of Bermuda Grass

THE best way to eradicate a plant is to take advantage of its natural weaknesses.

The most vulnerable characteristics of Bermuda grass are that the root stocks are unable to withstand exposure either to intense cold or to severe drying and that the plant can not endure prolonged shading.

Combining Shade and Intertilled Crops

Bermuda grass does not thrive except in open places and can not resist the effect of prolonged shade. This makes it relatively easy to bring the weed under control by smothering it with heavy growing or shade crops alternating with intertilled crops.

Many of the root stocks may be removed after shallow plowing by harrowing or raking. This process entails additional labor but assists materially in subduing the weed.

The summer shade crops best suited for the eradication of Bermuda grass are velvet beans and cowpeas, although any other shade producing plants, such as soy beans, sorghum, and millet, may be used. On poor soils velvet beans are the most efficient. Shade crops should be heavily seeded. The following crop should be winter oats or rye, either with or without vetch. After the removal of the oat or rye crop an intertilled crop, usually corn or cotton, should be planted. When the intertilled crop is removed the Bermuda grass will have been eradicated, provided the tillage was thorough. If the weed has not been eradicated, the entire process may readily be repeated, since by so doing there is no loss of the use of the land. An additional advantage of this combination method is that no organic matter is lost to the land.

In case the land is in Bermuda grass sod, it may be plowed either in the fall or in the spring. If plowed in the spring, plant the summer shade crop and continue as previously suggested. If the land is plowed in the fall, plant the winter crop, follow by a summer shade crop, then another winter crop, after which the land should be practically free of the weed and ready for the intertilled crop.

The success of the method combining shade and intertilled crops depends on having the crops follow each other in such close succession that there will be no intervals during which the Bermuda grass will have a chance to spread, as it will quickly reestablish itself under favorable conditions.

Winter Killing

Bermuda grass can not withstand severe cold. This weakness may be counted on to secure its eradication in any locality where prolonged periods of cold are experienced. The thick, matted root stocks should be plowed shallow in the fall, thereby exposing them to winter freezing. A single severe freeze will often almost completely destroy the grass in a field so treated.

Another method of securing winter killing is repeated disking, cross disking and harrowing during the winter season. The winter killing method conserves the organic matter contained in the weed growth.

Fallowing

A plan practiced successfully in this state is to pasture the infested land closely during the spring and plow very shallow in early summer or as soon as the ground has dried out. The land is then thoroughly disked, immediately after which the spring-tooth harrow is used in order to drag out the pieces of grass and bring them to the surface. This harrow is used every other week until fall, when the land is plowed deep and planted to a winter crop. An intertilled clean up crop is grown the following spring in order to destroy any Bermuda grass plants which have survived.

Grazing With Hogs

On light sandy soils hogs are sometimes used to dig up the root stocks, which they eat greedily. Plowing will greatly aid the animals to get the root stocks. The hogs, of course, should not have their snouts ringed.

For Small Areas

On small areas the following method is effective: Plow shallow to a depth of about three inches during a midsummer period of dry weather, turning the matted root stocks to the sun as much as practicable. They should remain exposed until the entire surface is well dried out, a process which will be aided greatly by stirring the mass of plowed-up root stocks every few days with a spading fork, rake or spring-tooth harrow.

When the mass is thoroughly dry it may be raked into piles and burned or else removed to waste places. This method is laborious and has the disadvantage of wasting the organic matter contained in the grass.

In such limited areas as gardens the root stocks can be gathered up with a rake or fork and burned. Another method which has been successfully used for small patches is to cover the infested spots in summer with tarred or other heavy paper in such a manner that the light is entirely excluded. The edges of the paper should be overlapped and covered with soil and the entire area of the paper well weighted down with soil or stones. In about two months it will be found that the Bermuda grass is entirely killed.

RESTRICTIONS ON ROAD WORK REMOVED

Work on state highways will be resumed without federal restrictions. We are in receipt of notification from Washington that:

"The United States highways council announces that no further applications need be made to it for approval of highway projects, that previous disapprovals are revoked, and that pending applications require no further action. Procedure in securing materials and transportation should follow normal practices, officials of the council said. The removal of restrictions does not affect highway bond issues, which are under control of the capital issues committee. State highway departments will not be asked to submit programs for next year's work."

CASTOR BEAN PRICE RAISED

Word has been received that the government price for cleaned castor beans has been raised from $3.15 to $4.50 a bushel. The government is also anxious to buy all wild or volunteer beans of mixed varieties as delivered by boy scouts or others, and offers 3½ cents a pound for unhulled, and six cents a pound for hulled beans. Los Angeles has been designated as a receiving station.

SULPHUR FOR TREATING SEED WHEAT

It has come to our notice that some prominent wheat growers made the experiment last year of using sulphur instead of formaldehyde for treating the wheat seed before planting. It is claimed that about 10 pounds sulphur to 90 pounds wheat seed drilled into the soil when planting not only increased the crop of wheat, but prevented smut.

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Here's the power **you** want for all around farm work. Power that always fits the load, and that means longer life for your engine, with the utmost economy of fuel.

Let Heider owners tell you about it. R. E. Taylor of Dysart, Iowa, says: "My Heider is as good as ever. Haven't had one cent of expense. I used it for putting in my crops last spring. Cut my grain and for everything that needs motor power. It is the only machine to trust with hired men, as it is so simple."

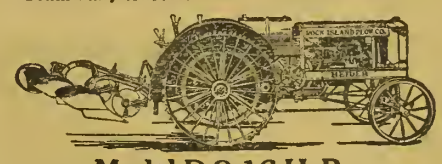
Another owner, Wm. Korrect of Bird Island, Minn., says: "I bought a Heider in 1911 (seven years ago) and it is in good working order today, shelling corn at present. I used it for hauling feed, hauling grain, hauling manure, unloading hay, hauling hay from the field, pulling hay loader and binder, and for plowing, discing, sawing wood, grinding feed, shelling corn, grading roads, running grain elevator and other jobs around the farm. **It has the only reliable control,** barring none."

Seven Speeds forward or reverse with one lever, and without changing gears for either traction or belt. The Heider is backed by 11 years of successful field service in the hands of owners. It has made good in all farm work.

Manufactured by **Rock Island Plow Co.,** Rock Island, Illinois
Established 1855

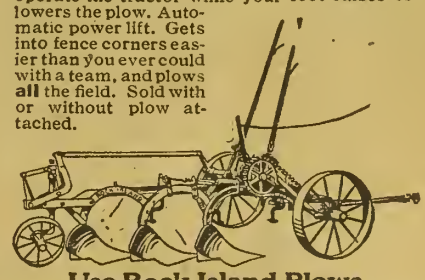
Rock Island No. 38 One-Man Tractor Disc Harrow

Heavy steel construction especially adapted to tractor work. Close-up levers permit one man to operate tractor and disc. Extremely flexible. Note the unusual clearance. This disc can't get clogged. Two sizes, 8 and 10 feet. Can be nsed behind any tractor.



Model D 9-16 H.P.

with Rock Island No. 9 plow attached. The time and work saver in plowing. Your hands operate the tractor while your foot raises or lowers the plow. Automatic power lift. Gets into fence corners easier than you ever could with a team, and plows **all** the field. Sold with or without plow attached.



Use Rock Island Plows

and get the best results behind your tractor. The famous Rock Island "CTX" Bottoms turn the furrow slices clear over—prevent air spaces from stopping the moisture. *Front furrow wheel lift.* 2, 3 or 4 "CTX" Bottoms.

E. P. Bosbyshell Co., 127 N. Los Angeles St,. Los Angeles, Cal., *Distributors*

Model C 12-20 Heider Tractor
Operating Feed Grinder at Third Annual Tractor Demonstration, Los Angeles

PURE BRED REGIST'D HOLSTEINS

Tuberculin Tested State Supervision Individuality Production Butter Fat Everything Guaranteed Breeding

King Korndyke Pontiac

(shown above)

by every right of inheritance should transmit great production and high class type. His sons and daughters have already proven his ability to transmit type of the first rank—daughters with the big, deep bodies and the ample, fine textured udders that go with large dairy production. As for his sons, one of them sold for $6500.00 at public sale, going to head W. J. Higdon's fine herd at Tulare.

Two daughters of King Korndyke Pontiac recently freshened in our herd and made very satisfactory records. King Korndyke Pontiac Charlotte, under official test made 22.92 pounds butter in seven days as a junior three year old. Natoma Superba Pontiac, freshening at two years four months, made 19.25 pounds butter in seven days. We have several other of King's daughters to freshen this winter and they look especially promising.

You need one of his young sons in your herd. Come and see what we have on hand or write for pedigrees and prices. We make liberal terms if desired.

Prince Gelsche Walker Kornkyke

(shown below)

JANE GARDEN FARM

SACRAMENTO — CALIF.

FRED W. KIESEL PROP'R. C.W. YOUNG SUP'T.

Briggs

"He Has Developed Wonderfully"

Is the universal statement of all who saw our great junior herd sire

King Korndyke Pontiac 20th

when we bought him as a calf, and who again saw him out on the show circuit this year, where at California State Fair he was defeated in class only by the twice grand champion bull.

The way he is deepening and lengthening out, and the splendid vigor which he possesses, are most pleasing to us, as he is doing even a little bit better than we expected of him.

And his first calves that are now coming are certainly beauties. It is not too early to begin to figure with us on one of his young sons for your herd. Come and see them or write for description and price of one.

NOTE: We are selling some choice, highly bred cows and heifers bred to King Korndyke Pontiac 20th in the Tulare Sale, November 20-21.

Our Entire Herd is Tuberculin Tested

Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

Santa Anita Rancho

Anoakia Breeding Farm

REGISTERED HOLSTEINS

A herd of fine individuals, strongly bred in the lines of great production as evidenced by both short and long time records, handled in a manner to produce sound, healthy breeding stock.

Merci Lad Korndyke Burke

Son of De Kol Hengerveld Burke who has a long list of A. R. O. daughters with records up to over 35 pounds butter in seven days, and out of Winnie Korndyke Cornucopia De Kol who made 31,034.1 pounds milk in one year and was the first cow in California to make over 1200 pounds butter in one year. A few of his good sons out of excellent dams for sale.

SANTA ANITA RANCHO

Anita M. Baldwin, Owner

Santa Anita, Cal.

W. H. Taylor Supt.

How a Hog Auction Failed

Written for California Cultivator By H. J. Baade

THE fat hog auction sale conducted by the Napa County farm bureau at St. Helena Saturday, November 16, was a failure. The farmers lost money on the undertaking. It appears that several reasons can be given for sucb an unfortunate outcome. First, the packers failed to send buyers. Second, the market is on the decline. Third, the wrong day of the week had been selected for the sale.

The first condition was the one most feared by the committee in charge. In order that the packers might be notified in ample time, the packing concerns operating in the San Francisco Bay region were notified by the auction sale committee November 4. They were told that 200 or more grain fed hogs would be offered for sale on November 16 at St. Helena, and each firm was invited to send a buyer. On Wednesday, November 13, a member of the live stock committee of the food administration was called by telephone, and was told that the committee felt uneasy as to the buyers appearing at the sale. He agreed to take the matter in hand and notify the packers to attend the sale. Both letters and personal solicitation failed to bring the buyers.

The declining market is a condition for which no one is to be blamed. We are all glad to enjoy the sunbeams of a world peace and the return of normal conditions with normal prices.

As to the selection of Saturday for the day for this sale: Saturday has been the day of many of the successful sales in the state. It is convenient for the farmer and a satisfactory day for a sale providing buyers are present. If, however, buyers are absent and it becomes necessary to ship them, Saturday is a bad day to select. The farm bureau had faith in the good will of the packers and expected them to send buyers, although a local buyer stated that he knew beforehand the sale would prove a failure. How he knew, the farm bureau has not yet discovered. Had the hogs not been sold it would have been necessary to ship. They would then have arrived on the market late Saturday night. To hold them till Monday's market would have meant an additional expense, and then what was to be gained by such a procedure? What assurance was there that the market would not have dropped a cent or two by that time? Had the hogs been assembled on any day but Saturday the farmers would have taken a chance at shipping, instead of selling at the price they did.

We find that some farmers who had previously been offered 16 cents were obliged to take 13. In fact the one buyer who, by chance, attended the sale and bougbt most of tbe hogs did not care to take some animals at any price.

These results will no doubt mean no more fat hog auction sales in Napa County. Tbe object of this sale was to group and grade hogs so as to enable the farmer to sell, in quantity, a superior product.

The result is that packers, with the monopoly of buying in their hands, refused to cooperate. The farmers acted in good faitb, tbe packers ignored them. . The farmers had fed expensive grain at the instance of the government's request for more and better pork. Could the farmers sell direct to the government all would be well. Why this present system, whereby the producer is absolutely dependent on the packer to dispose of his live stock? The packer always takes his toll regardless of conditions, but what about the producer?

The federal trade commission has made certain recommendations regarding the control of the situation. To counteract these recommendations the various packers are spending enormous sums of money in advertising and printing to accomplish what may be called "educating the public." Hardly a day passes but brings some of their printed material to my desk. All of it is skillfully prepared, but what will it profit them if, after their "educational program," they treat the farmers as they did at the St. Helena sale?

Cooperation in California did not get a setback at this sale. We hope that the day may not be far distant when on the list of California's marketing associations will be found an association for the live stock producers, one sufficiently strong to make the packer come to terms or eliminate him.

The Napa Failure and Suggestions

Written for California Cultivator By W. W. Everett

I AM NOT deeply interested, personally, in the prevailing markets, owing to the fact that I am raising only pure bred Duroc Jersey hogs at River Bend Farm. But the hog market conditions are important to the pure bred breeder because his sales generally are to those who want fine foundation stock to raise market hogs, and their purchases are mainly regulated upon what they will eventually receive for their market hogs coming from pure bred stock.

Looking at the hog market in San Francisco, I can readily recognize the fact that the big packers there have been greatly handicapped by the lack of labor. In one instance, I know that, at this writing, some 3000 market hogs are in the yards waiting for labor to kill and dress them. Sucb a condition naturally reacts upon the market prices and the hog raisers suffer accordingly. For this condition there is no one to blame, owing to the abnormal labor shortage due to the war demands. Now tbat peace seems near at hand, it will not be long before we get back to a satisfactory supply of labor.

I have watched witb much interest the community sales of properly grained market hogs. This is a vital step, in the right direction, from the standpoint of producer and the packer, but there is much to be bettered in the manner in which these are conducted.

Last Saturday, here in St. Helena, a number of farmers sent in prime, grain finished hogs to be auctioned off under the auspices of the Napa County farm bureau live stock committee. A great effort had been made by the latter to conduct the affair in the best possible manner and much praise should be given the members for the labor which they donated, but the auction was not a success from the farmers' viewpoint.

The buyers were not present in satisfying numbers to bid upon the 250 hogs consigned to this sale. Local county stock speculators got in their deadly work, and the farmers suffered a loss in the aggregate of over $2500. This, of course, they could not afford, and the next public sale will, many of us fear, suffer from lack of consignments.

What sbould be done under the circumstances to overcome such expensive fiascos? Of course, my opinion counts for little, but if I were to consign hogs to such an auction, I would want tbe sale to be conducted by those who are familiar with the correct manner of running such public auctions. The local committee did not care to pay the auctioneer's fee and used a local farmer on the block. They saved a possible $125 by so doing, but they lost nearly $2500. Economy doesn't pay at all times. Those who conduct such sales should pay for tbe right officials to bring the buyers and the sellers together, and tbus be certain that satisfactory bids prevail. Suitable advertising and proper management would have saved the hog men a pile of money in this instance, and tbe farmers and stock raisers might just as well, now as any time, realize that the selling end of the business is just as important as the proper conditioning of their product.

To my way of thinking, I would like to see the farmers in each and every county create and maintain a buying and selling corporation to dispose of the farm products raised in the several counties. The farmers and stock raisers should be members of this cor-

Warranted to Give Satisfaction

Gombault's

Caustic Balsam

Has Imitators But No Competitors

A Safe, Speedy, Positive Remedy for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs and Lameness from Spavin, Ringbone and other bony tumors. Cures skin diseases or Parasites, Thrush, Diptheria. Removes Bunches from Horses or Cattle.

As a Human Liniment and Antiseptic for external use it is invaluable.

Every bottle of **Caustic Balsam** sold is warranted to give sstisfaction. Price $1.75 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

Breaking all Records

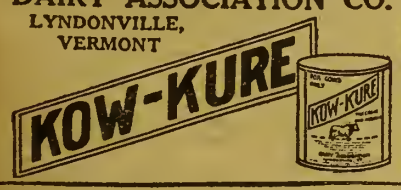
Right now—when milk prices are breaking all records—is the time to make new high records in milk production. It is surprising how effectively this can be accomplished by raising the health standard of your dairy cows.

The most prevalent cow ailments —Abortion, Retained Afterbirth, Bunches, Lost Appetite, Scours, etc. —arise from an impaired condition of the genital and digestive organs. Kow-Kure has remarkable medicinal properties that act directly on these organs, producing regular, healthy action. The cow thrives on Nature's food, and a full milk flow naturally follows.

An occasional use of Kow-Kure will prevent disease and pay for its cost a hundredfold. The best dairymen keep it on hand constantly. Feed dealers and druggists sell Kow-Kure, in 60c. and $1.20 packages.

Send for free book
"THE HOME COW DOCTOR"
—very useful wherever there are cows.

DAIRY ASSOCIATION CO.
LYNDONVILLE, VERMONT



HOLSTEIN-FRIESIAN CATTLE

Registered young bulls from best families.

Registered Berkshire Pigs

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee.
Careful attention given to mall orders

Whittier State School
Whittier, California

4 Duroc Jersey BOARS 4

and some splendid gilts for sale
Fair Prize Winners. Write

W. M. Way Modesto, Route 1, Cal.

The New York Farmer says the work of the Women's Land Army has been universally satisfactory.

poration and should agree to sell to it every product of importance raised on the farms, ranches and ranges, and to sell only to that corporation. No business of any moment can be conducted on less than a 15 per cent leeway, but, should the corporation be able to conduct its business and overcome its overhead and other operating expenses on a less percentage, then the stockholders could annually divide the unspent increment.

A competent sales manager should be employed at a good salary, because satisfactory operators are not cheap in these, or normal, days. This manager should cooperate with the executive board of the corporation. With the selling end so cared for, the producer would not be subject to the jockeying tactics of the wise buyers who play upon the unbusinesslike farmer or live stock man and, in the end, the latter would find that his best business interests would be better cared for by the corporation than through his own individual selling efforts.

The producer many times needs cash and needs it badly at certain times. He is liable to sacrifice his best interests to get his money at just the time he wants it. With a corporation, having established a line of credit at its county bank, the member could be protected and furnished the necessary operating funds while the interests of his fellow producers would be protected at the same time through the prevention of sales of farm commodities at too low prices. Every other branch of industry has its safeguards, but the poor farmer and equally poor stock raiser gets the short end of the game when he tries to play a lone hand. If they cooperate in a wisely managed and soundly financed corporation, the producers could laugh their way through life instead of having to use props to support the pessimistic droop at the corners of their mouths.

FED STEERS IN SOUTHERN CALIFORNIA

F. P. Allen, local representative, United States bureau of markets, Los Angeles, believes that the recent government orders for export beef, which are new being filled by a number of Coast packers, presage much for the future development of the cattle business in this state. In commenting on the possible effect of this new outlet Mr. Allen says:

"It has long been the custom for most of the cattle feeders in Southern California to ship their finished product to San Francisco or the Kansas City market because there has been practically no market in this city for fed steers. A recent order for export beef that some of the local packers are now filling, has created a new outlet for this grade of beef. Among the several car loads of choice steers received during the past week were some Herefords and Shorthorns from the lower San Joaquin Valley that had been fed cotton seed meal, alfalfa and barley and showed a dressing percentage of 58.4 for one lot and averaged 57.75 per cent for all lots of them on the warm test sheets.

"The knowledge of this new outlet for fed cattle offers an inducement to other feeders to follow the example set by these San Joaquin Valley feeders. The high prices obtained for these steers has proven that it is a profitable investment from the feeder's standpoint, and he is also doing a service in helping to supply the great demand for beef abroad."

Great care and thoroughness should be exercised in cleaning and disinfecting barns and stable yards in which animals with contagious disease have been kept," says W. H. Feldman of the Colorado Agricultural College. "Such diseases as glanders, anthrax, rabies and, to a lesser degree, tuberculosis, are highly dangerous to man as well as to other animals and no laxity should be tolerated in cleaning up premises where these and other communicable diseases have been known to exist. The expense of a thorough disinfection is not large and the equipment needed is simple. The following is a list of the most efficacious disinfectants: Chlorid of lime, bichlorid of mercury, formalin, carbolic acid, crude carbolic acid, compound solution of cresol. A pail and the ordinary spraying pump is usually satisfactory for applying any of the above solutions."

50,000 lbs. Germain's proven hairy Peruvian alfalfa seed sold to big land company
Germain's
HAIRY PERUVIAN ALFALFA
the proven strain

The owners of one of the biggest ranches in the Southwest wanted the best hairy Peruvian alfalfa seed that money could buy. They bought Germain's — the **proven** strain—five big truckloads—25 tons!

We've just published a large illustrated folder entitled "The Truth About Germain's **Proven** Hairy Peruvian Alfalfa Seed." It contains a photograph of the 50,000 pound order. Write or call for this free folder today.

The supply of Germain's "proven strain" is going fast. Better place your order now.

Germain Established 1871
Seed & Plant Co.
N. E. Corner
Sixth & Main Sts.
Opp. P. E. Depot
Los Angeles, Cal.

HEREFORDS

ALAMO HERD
(Founded by the Late Gov. Sparks)
Registered Herefords
Herd and range bulls reasonable. Largest Hereford herd in California.
W. D. DUKE, Likely, Modoc Co., Cal.

Hereford Farms
Geo. Watterson, Owner
Bishop, Inyo County, Cal.
Anxiety, Repeater, and Bonnie Brae breeding. Bred and raised on mountain range.

Economy Stock Powder

fed regularly to sheep will keep them free from worms. It also acts as a tonic, a laxative, a blood purifier and as an aid to digestion cannot be improved upon. Will eliminate BLOAT and ALL AILMENTS COMMON TO SHEEP.

SEND FOR A FREE SAMPLE.

Economy Hog and Cattle Powder Company
Hearst Bldg. **San Francisco, Cal.**

Prince Hiske Walker

He is by Prince Geische Walker and out of Hiske of Riverside, being therefore full brother to Lady Hiske Walker, 34.25 pounds butter in seven days as a junior four year old, former state record in class.

His offspring are uniformly straight, vigorous, and well marked. A few of his young sons for sale.

Packwood Farm
W. F. Mitchell, Owner *Visalia, Cal.*

Sir Aaggie De Kol Acme 2nd

Five of his seven nearest dams average:
Milk one year....24,089.88 pounds
Butter ..... 1,105.07 pounds
This butter average is equalled by only one other bull of service age in the world. Buy your next bull from

Eldorado Herd
Alex. Whaley, Owner **Tulare, Cal.**

Creamcup Holsteins Headed by the 33.92 pound bull Creamcup Champion Pontiac
Burke. A few young bulls for sale. **M. M. HOLDRIDGE, Rt. A, Box 437, San Jose, Cal.**

WAR CREATES THIS IS AMERICA'S GREATEST TAGUS RANCH DECEMBER 10

750 High Class Breeding Animals At Your Own Price

Including the famous producers and prize winners in the herds. Animals that money could not buy from us in anything but a dispersal sale.

Tuesday, December 10th

We Will Sell

90 Registered Holsteins

For several years we have subjected our Holstein herd to the most severe culling, throwing out every single animal that did not measure up to our standard. As a result the herd that will greet you on sale day is one of which we may feel justly proud. The milking cows will show for themselves, through their many splendid official records, and the splendid families represented in their breeding.

Of our heifer herd, from calves up to bred heifers, we can conscientiously say that we believe no breeding farm with a herd of equal size can show better. Buyers wanting heifers from two-year-olds down should, in justice to themselves, make it a point to be at this sale.

Among the many splendid individuals to be sold are:

TWO 26 POUND THREE-YEAR-OLDS and five of their offspring.

34 COWS AND HEIFERS bred to King Sadie Vale Rose, son of King Korndyke Sadie Vale.

FOUR DAUGHTERS of King Segis Pontiac Jannek, two of them out of a 27.96 pound senior three-year-old.

12 DAUGHTERS of King Sadie Vale Rose.

12 GRANDDAUGHTERS of Korndyke Queen De Kol's Prince, 91 A. R. O. daughters with records up to over 35 lbs. butter in 7 days and over 1000 lbs. in one year.

8 DAUGHTERS of Sir Holland Gamp, sire of the 25-lb. two-year-old, El Dorado Winifred.

2 DAUGHTERS of King Segis Pontiac Zella.

FIFTEEN OTHER COWS AND HEIFERS with records up to over 25 pounds butter in seven days.

King Sadie Vale Rose

will himself be sold, and his breeding and individuality entitle him to a place at the head of a high-class breeding herd. He is by King Korndyke Sadie Vale and out of a 27.98 pound daughter of a 32.41 pound cow, and has an average of 33.82 pounds butter in seven days for his three nearest dams.

A SPLENDID SELECTION OF YOUNG BULLS will include sons of "King" out of dams up to over 26 pounds.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER

We Will Lease

in tracts of 20 acres and up, on liberal and attractive terms, to

SUCCESSFUL AND RESPONSIBLE PARTIES

the entire

TAGUS RANCH

The richest, most productive, best watered and equipped

6000-ACRE RANCH

in California. Located in Tulare County, five miles north of the city of Tulare, on the main cement State Highway. Apply to

Pacific States Corporation

(Owners)

At office on ranch, or write P. O. Box D, Tulare, Cal.

Wednesday, December 11th

We Will Sell

200 REGISTERED DUROC-JERSEY HOGS.
200 HIGH GRADE POLLED ANGUS COWS.
100 HIGH GRADE SHORTHORN COWS.
15 REGISTERED ABERDEEN ANGUS BULLS.
3 SHORTHORN BULLS.

THE DUROCS offer a splendid selection of breeding and show animals of most highly approved blood lines, noteworthy for the great uniformity of breeding throughout the herd.

Twenty proven brood sows will be sold, every one of which we can recommend as the sort of sow that regularly farrows large litters of strong, uniform pigs, and every one of them will be a big money maker in the hands of the man fortunate enough to buy.

CALIFORNIA'S DEFENDER, the senior herd sire, is in the sale. As all Duroc breeders know, this famous boar was Junior Champion at Panama-Pacific International Exposition, and his worth as a breeding boar is fully up to his show ring performance. He is vigorous, a sure breeder, and a boar that any man might own with pride and profit.

More than 150 daughters and sons of California's Defender will be in this sale, making a wonderful opportunity for the securing of liberal drafts of this great blood. Those wishing to establish high-class breeding herds will find here the animals fit for the purpose.

THE POLLED ANGUS

The 200 cows in this sale represent the tops from several hundred head of our range breeding cows, those that we thought below the standard for this great sale now being on their way to the block. We feel safe in asserting that California stockmen have never before had such a grand opportunity to found range herds of these hardy and profitable cattle. The entire Angus breeding herd had an 85 per cent calving record last year, with not a single death from disease.

The 15 registered bulls are from the best Aberdeen Angus tribes, rugged, typey individuals, young but have already seen range service, and they are the pick of a larger number until recently in service.

THE SHORTHORN COWS

The 100 head of grade Shorthorns are mostly reds and roans, all young cows, and the pick from a very large number, the balance going to the fattening yards.

FOR THE BUYER OF A FEW HEAD

While most of these cows will be sold in car lots, we have made especial provision for the buyer who wants only a few head and will sell a substantial number of the cows individually.

OPPORTUNITY YOURS!

FARM AUCTION SALE

TULARE CALIFORNIA

11-12-13, 1918

$50,000 Worth of the Highest Class Farm Equipment and Implements for Every Kind of Crop

In first-class condition, some of them not now obtainable new at any price.

Thursday, December 12th
We Will Sell

17 REGISTERED PERCHERON AND BELGIAN MARES.
16 REGISTERED PERCHERON & BELGIAN STALLIONS.
100 HIGH GRADE BROOD MARES, WORK HORSES, AND MULES.

We shall part with nothing more reluctantly than with our good horses, for they have been an especial pride with us. Our registered stallions and mares have been frequent and consistent winners on the show circuit wherever shown, and their breeding is of the highest excellence.

We confidently believe that we have both stallions and mares that are not excelled anywhere on the Pacific Coast, for our foundation stud was chosen only after thousands of miles of travel and inspection of a very large number of animals.

Our grade brood mares and work stock are high class, practical farmer's animals, that have proven their worth right on this ranch in our every-day operations.

We feel sure that this sale comes at a time when it will be particularly appreciated by those who wish to buy horses. Beyond the possibility of a doubt the draft horse business in the United States has now entered upon one of its most prosperous eras, but it is up to every raiser of horses to breed the sort that will meet the most desirable market demands. Buyers will find the right sort in this sale in wide selection.

Announcement

For ten years the 6000-acre Tagus Ranch has been devoted to intensive agriculture and breeding of pure bred livestock, producing only the best.

To the accomplishment of that end no expense or endeavor has been spared, and as a result the **TAGUS RANCH** occupies a position of undisputable primacy with respect to its **PURE BRED DAIRY CATTLE, BEEF BULLS, SWINE, STALLIONS** and **BROOD MARES**, and **MODERN FARM MACHINERY** and **EQUIPMENT.**

This development has reached its culmination under the direction of Mr. Hulett C. Merritt's son, Hulett C. Merritt, Jr., who, at the moment when the fulfillment of their ideals was being realized, answered the call of our country and is now en route over seas.

No one could be found to take his place, and Mr. Merritt was therefore confronted with two alternatives, and only two. He could try to keep matters in their present style until his son should return to take up his work again, or he could dispose of the stock and equipment which they had accumulated through their careful development.

Many reasons made it impossible for Mr. Merritt to give to the Ranch the careful and constant attention which its high standards required. To this problem Mr. Merritt could make but one answer.

At this time, when waste in any form increases the difficulties of accomplishing the common task, Mr. Merritt could not permit so much essential material to lie idle. Therefore he authorized me to conduct a complete dispersion sale.

In all my extended experience I have never known a sale which presented so many opportunities, which live stock breeders and farmers may turn to their own advantage, and made possible by careful, intelligent breeding and by unstinted expenditure.

C. L. HUGHES,
Sales Manager.

Friday, December 13th, WE WILL SELL

$50,000 WORTH OF HIGH CLASS FARM EQUIPMENT AND FARM IMPLEMENTS FOR EVERY KIND OF CROP.

Only the most modern equipment and implements of the best manufacture have ever found a place on Tagus Ranch, and our extensive and intensive farming operations have called for a very broad variety of implements.

All of the equipment and implements in this sale are of comparatively recent purchase, and they are in first-class condition. Many of the most useful items are still in the original crates and cases in which they came from the jobbers and manufacturers, so suddenly did we halt our farming operations when the decision was made to hold this sale.

The space of this announcement is entirely inadequate to give a complete list of the equipment and implements to be sold, but a few of the items are as follows:

30 Bain and Studebaker Wagons, most of them absolutely as good as new, and many of them, particularly the heavier Bains, not to be had new except from the very largest jobbing centers. **24 Plows, 3, 4, and 5-gang Plows, Disk Plows, Engine Plows, Road Plows, Special Purpose Plows,** all of the very best makes.

Beet Implements, including Drills and Beet Pullers.

Hay Mowers, Bunch and Buck Rakes, Tedders, Loaders, Stackers.

Potato Cultivators, Diggers, and other special machinery.

A long list of cultivators, seed drills, gasoline engines, and other items.

5 15-35 h.p. Sandusky Tractors, in first-class condition, and ready to go right ahead the day you get them home. Also 2 Bull Tractors.

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As good as the best and better than the rest. A boar or a sow pig sired by my great herd boar Director, and out of one of my choice sows will add prestige to your herd. I am booking orders now for the pigs of March and April farrow. Write now and place your order.

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Live Stock News Notes

Miller & Lux Buy Herefords

E. K. Brown, representing the Santa Rita Ranch, Dos Palos, recently visited the Carl Miller herd at Belvue, Kansas, and contracted for a carload of yearling heifers. These heifers, along with a carload of yearling bulls from the Mortimer herds of Nebraska and several other purchases made of Kansas, Nebraska and Colorado breeders, amounting to around 400 head, were shipped to Bloomfield Farm, Gilroy.

Miller & Lux are planning to establish a herd of Herefords that will eventually be the largest herd west of the Rocky Mountains.

The Kindly Hun

Without regard to the numerous other reasons why every live stock man wanted to see them beaten to the earth, the Huns' treatment of farm animals alone is sufficient. In Everybody's Magazine Brand Whitlock, former American minister to Belgium, relates this instance of Hun wantonness: The Germans visited a stock farm, one of the most famous in Belgium, took six or seven stallions, and turned them into a paddock to see them fight; afterward some of the officers hamstrung them with their sabers.

25 Jerseys to Red Cross

Even though the war is ended a vast amount of money is still pouring into the Red Cross to finish up its work of comforting the sick and wounded "Over There." One of the most recent contributions came through the sale of 25 head of Jerseys which were sold at auction for $4383, an average of $195.32. W. A. Brewerton of Thornbury Farm, Libertyville, Illinois, was the donor of these animals.

Live Stock Killed in Los Angeles

During the month of October the eight leading packing houses, together with several smaller firms, slaughtered 14,057 beef animals, 3445 calves, 16,125 hogs, 22,670 sheep and lambs, 365 goats.

An interesting fact disclosed by the killing sheet is the percentage of cows and steers slaughtered.

Not so many years ago the bulk of the kill was steers, but now the proportions have changed and last month 8543 head of cows were killed as compared to 5160 steers.

There is considerable food for thought in these figures.

Swine Breeders Active

There is great activity in the California Swine Breeders' Association. Director Frank B. Anderson, Berkshire breeder of Sacramento, is looking after the publicity for the association. Hog raisers all over the state are being made acquainted with the aims of the organization.

It is hoped to stabilize prices of pork and feed products, and to increase production of pork by working in close harmony with the food administration.—W. S. G.

Buy Bull on Cooperative Plan

The State Land Colony Live Stock Association has made arrangements for the purchase of a son of the world famous Morris cow, Tillie Alcartra. The membership of this association consists of settlers on the state land colony at Durham. It is the plan of the colony that only Holstein cattle will be used by the settlers, and thus develop a strictly Holstein community.

The bull is to be purchased through the issuance of $5 debiture certificates. The service of the bull will be available to all the association members for a fee of $10, which it is calculated will pay for the keep of the bull and eventually return the cost to the association.

Brush Berkshires to Sonoma Farmers

The Berkshire herd of Frank A. Brush has been dispersed at private sale by J. Francis O'Connor of Santa Rosa, in a way that will be of great benefit to the Berkshire breed in general and to the live stock interests of Sonoma County.

Mr. O'Connor advertised that he would sell the famous prize winning hogs at farmers' prices, and in a very short time they had all been taken by farmers living close by at prices that breeders generally can afford to take for the average run of their herds. Sows sold from $100 to $125, gilts $50 to $60, and pigs from $25 to $30.

Sometimes farmers get the idea that stock produced by pure bred breeders is "out of their reach," and they never ask the price. There should be some way to get breeders and their neighbors closer together.

With all the good herds that will be established because of this Brush dispersion, Sonoma County is sure to be one of the leading Berkshires breeding centers on the Pacific Coast.—W. S. G.

$225 Worth of Pork

Pure bred Poland-China barrows, bred and fed by M. Bassett, Hanford, and sold to the Western Meat Company for $20.00 per cwt. These barrows were farrowed in September, 1917 and when sold, early in November, averaged 375 pounds. Good blood, barley and alfalfa was the combination.

Mirrors for Handling Sheep!

Every man who has "lost his religion" when loading or cutting out sheep will welcome this bit of news in the National Wool Grower:

An Australian grower has reported the use of a mirror to get sheep to pass into pens where they are wanted. He places a mirror three feet square opposite the opening through which the sheep are to be driven. The sheep sees its outline in the mirror and thinking it is another sheep, passes through at once. It is reported that a mirror properly placed in the cutting out chute eliminates all delay in getting the sheep through. This device has only been tried by one Australian, but he reports great success from its use.

What Are Holsteins Worth?

The Holstein-Friesian Register reports that during the first six months of 1918, 8635 head of Holstein cattle were sold for $2,563,889, an average of $296.92.

Included in the list are the reports of four California sales in which 257 head sold for an average price of $330.44.

Butte City Ranch Sales

W. S. Guilford of the Butte City Ranch, Butte City, reports the sale of a Shorthorn bull by Victor Stamford,

2 to 1

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Berkshires—Both Sexes

H. L. & E. H. Murphy

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to Dr. L. E. Tuttle of Willows.

This ranch has also made recent sales of Shropshire sheep to the City of San Francisco and to the Sandercock Land Co., who operate in the Natomas district near Sacramento.

Range Men Buy Better Bulls

Dell Grieve of the Davis Horse and Cattle Co., Davis, writes that he has just returned from the East with shipment of five carloads of Shorthorn and Hereford bulls.

The Davis Horse and Cattle Co. has built up an extensive business in range bulls, handling several hundred a year.

Mr. Grieve states that there has been a noticeable increase in the demand for bulls of the better sort.

Miller & Lux Buy Hereford Bull

Miller & Lux, San Francisco, have purchased the Hereford bull, Rialto 2d, from Robt. H. Hazlett, Eldorado, Kansas. Rialto 2d was sired by Caddo 2nd, a bull that has rendered excellent service in the Hazlett herd.

New Cattle Pens at North Portland

A new block consisting of sixteen cattle pens has been added to the North Portland yards. Some of the pens are double, and the increased capacity will amount to about 500 head of cattle. All floors and water troughs are of concrete and overhead runways are provided.

One Shipment of Hogs, $105,166.95

What is said to have been the largest shipment of hogs ever marketed was received at Chicago October 9 from Darlington, Indiana. The consignment, sent by three shippers, was the largest ever received from the country, both in numbers and value. The entire lot of 34 cars was bought by Armour & Co. for $105,166.95. The hogs averaged 256 pounds and brought $18.50 straight, a record price for large shipments.

POLLED HEREFORDS TO COAST

Polled Herefords are going to invade a new territory next April when an offering of 25 to 30 head, selected from the leading herds of the Cornbelt, will be sold at the California agricultural college, Davis, California. The arrangements for the assembling, shipment and sale of these cattle are in the hands of B. O. Gammon, secretary of the Polled Hereford Association.

This will be one of a series of sales of cattle that will be held at Davis during the annual meeting of farmers and stockmen at the agricultural college. The sale will be widely advertised. The cattle will be assembled at some central point, such as Des Moines, Omaha or Kansas City. They will be sent forward in charge of a competent attendant who will care for them en route. The cars will be decorated with appropriate advertising matter and circulars exploiting polled Herefords will be distributed wherever the shipment stops on the way.

For this sale Mr. Gammon wants only polled Herefords of quality, animals that will be a real advertisement for the breed. He plans to make up the consignment of about one-third bulls and two-thirds females, ranging in age from 12 to 20 months. Consignors will be required to deliver their consignments, freight paid, at the central shipping point. The freight, feed and selling charges will be pro rated among the consignors.—American Hereford Journal.

CHEAP FRESH MEAT

It is possible to have a cheap supply of fresh meat throughout the winter in many communities where it has not been thought of.

One neighbor has a fat lamb, another a fat calf or yearling, another a pig or fat cow. If an arrangement is made by which one is killed a week, and the meat divided among all who are in the club, the winter's supply of fresh meat can be secured easily and cheaply. This has been done in many Eastern localities for years. It could be easily arranged here.—W. S. G.

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High Orion 221329, has a refused price of $3,500; Great Wonder 180989, Grand Champion at Iowa; Giant Invincible 208823, heads Waitmeyers Iowa herd; King Orion Cherry 80765, first Junior Yearling, Indiana and Ohio; King of Orions 240249, highest priced pig ever sold; Model Crimson Wonder 181217 a noted prize winner. Russel's Model 205512, second place at Nebraska.

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Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Peanuts

What is the best variety of peanuts for light sandy soil? When should they be planted and bow are they cultivated?—Subscriber, Turlock.

The Virginia peanut is considered the best all around variety. Sandy soils are required for the best growth of peanuts. They are a tender plant and should be planted after all danger of frost is over; generally from the middle of April to the middle of June. Plant in rows three to three and a half feet apart and one foot apart in the row, two to three kernels to tbe hill. Keep soil loose and irrigate only in the centers of the rows so that the ground around the plant does not become packed.—D. F. R.

White Fig on Black

Would it be possible to bud white figs into a black fig tree? If so, when can it be done, and how? I have room for only one tree, which is the black variety, but would like to have some white also, if budding can be done.—Subscriber.

This question was referred to Leonard Coates and he answers:

Yes. The bark grafting method is best. Budding would not be a success. Bark grafting is done in the spring when sap flows so that bark will slip. Saw off the limb and cut the bark down for about two inches in one or more places, depending on size of limb; usually two or three grafts are used. Make a long wedge cut on scion of your wbite fig, on which should be two or three buds; slip this down the vertical cut in bark, so that it lies on the wood; tie very securely and cover with grafting wax.

Quince Budded on Apple

Can quince buds be made to grow in an apple tree? I have tried it twice witbout success.—Subscriber.

This query was referred to Leonard Coates, who answers:

Quince buds on apple would not be successful. Most varieties of pear unite witb the quince.

Abscess on Rabbit's Shoulder

One of my doe rabbits has a hard movable lump on her shoulder, about the size of a walnut, quite tender when touched. What is cause and treatment if any?—Subscriber.

The writer would say your doe bad an abscess. When it is soft, clip away fur across tbe face of it and with sharp knife or razor make an incision across it. Remove inside pus, which should be found in a bag, cleanse wound with solution of peroxide of hydrogen and water, three-fourths water and one-fourth peroxide of hydrogen. Put any good salve on to prevent infection. If opening is large draw it togetber with piece of adhesive plaster. Keep animal in warm dry place for a time.—W. D. W.

Cabbage Aphis

Am sending cabbage leaf with bugs on. Will you please give me formula of some kind for a dip that is not expensive that I can dip the plants in before they are set out as they are ready for transplanting now?—Subscriber, Puente.

This specimen of cabbage leaf was badly infested with aphis. Treatment for this trouble is spraying with tobacco extract.

Pickling Ripe and Green Olives

I wish you would send me the recipe for pickling ripe and green olives. —Subscriber, Modesto.

See article by W. V. Cruess in this week's Cultivator.

Whitewash for Fig Tree

Do you consider it a benefit to fig trees to whitewasb the body or stump of the trees? If so, please give tbe formula.—Subscriber, Fresno.

E. W. Horton of Fancher Creek Nurseries answers:

We consider it a very good plan to whitewasb tbe body of fig trees. It protects them from insects and is a benefit to the health of the bearing tree. The formula we recommend is as follows: Tbirty gallons water, 40 pounds lime, one-half gallon salt. This makes a very good paste of whitewasb.

Rolling Tractor School

Where can I get definite information regarding tractor school dates, Unit No. 1, to be held at Santa Ana, Ontario or Van Nuys? What are the requirements and expenses in connection?—Subscriber, Fallbrook.

We have word from J. C. Beswick, Director Vocational War Work, State Board of Education, Sacramento, that the influenza quarantines have closed training centers already opened. Unit No. 1 began work at Madera on October 7, but tbis was discontinued. The course in each center is planned to last four weeks. Tbe first two weeks are devoted to gas engine instruction, the last two to tractor operation and repair and actual work in tbe fields. Dates of opening will be given in the Cultivator as soon as received from Mr. Beswick, also requirements of entry. Presumably tbe influenza situation will be cleared up in a very few days. Here's boping.

Care of Gladiolus

I would be greatly pleased if you could publish an article on the care of gladiolus and other bulbs. I am in the vicinity of Los Angeles. I always look through your paper for hints on flowers. Some of them have been of great belp to me.—Subscriber, Gardena.

We are sending this subscriber—and would refer others interested to—an extended article on "Gladiolus Growing in Southern California" in the Cultivator of July 20, 1918. This describes operations as carried out on a large scale for commercial raising of gladiolus, but the metbods of successful garden growing are the same.

"Those Troublesome Stumps"

Would some of our readers of the Cultivator kindly give me their experience in regard to the destruction of stumps? I know tbere are several ways to get them out, viz., lifting them out with dynamite, using a stump puller, and digging them out. The dynamite process I can't use for the stumps are close to residences; stump puller I have none, and it would not pay to buy one for tbe few stumps I have to destroy, and digging them out would take too mucb time and labor. I've eitber been told, or read about it, that by boring holes in the stump and filling them up with saltpetre and water, and plugging them up, the stumps can be burned out in a few months. I have the holes bored, and intended to charge them with the saltpetre but unfortunately I can't buy the saltpetre as I am told the government controls the supply. What other process can be recommended? The stumps are pine, Monterey cypress and eucalyptus.—G. W. R., Marin County.

Can our Cultivator readers help this inquirer with tbeir experience?

Walnuts Blighting

I have blight on walnut trees. Leaves turn brown early, usually south side of tree first, then new growth starts in the fall. Trees bear very light crops and look sickly. Some of tbe walnut trees tbat had large fine nuts last year have small ones this year about the size of filberts. Can you tell me the remedy?—Subscriber, Santa Ana.

The indications are "insufficient water supply." Not having the history of the orcbard it is not possible to give the exact cause, but walnut trees which have water sufficient to make a good growth in the spring will do as described if the water supply is insufficient during the summer and a supply is received from some source late in the season.

To get the best results the soil must be kept moist all the time whether it requires one or two, or five irrigations

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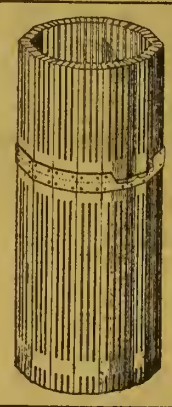

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in the dry months, and the water must go deep in the ground. If the water has been applied a little time before needed the trees will keep in good condition and the fruit wood will be fully developed for the next year by the time the frost may come, but if the trees were allowed to go partially dormant for want of water in July and August and then water should be applied in September and October a new growth will start which will not mature, and consequently the setting of nuts will be very light. If these trees are from 12 to 20 years old it is quite likely the growth is very brushy, in which case they need considerable thinning out to start a stronger growth of wood which will produce larger walnuts.—J. B. N.

Breeding Turkeys

I wish to keep five of my turkey hens for breeding next spring. Will one tom serve this many, or must I have a tom for every three hens? What is the average weight of Mammoth Bronze gobblers for market trade, and also the hens? My six months old gobblers average 16 pounds now. Is this good or not?—Subscriber, Tulare.

One tom is ample for five hens. Sixteen pounds is about the average weight of Bronze toms at six months of age. Hens weigh from nine to eleven pounds.—J. A. K.

Hatching Eggs

In mating a Rhode Island Red rooster with 12 hens, are the eggs fit for hatching right away or must I wait a few days before selling a setting?—Subscriber, Tulare.

Eggs should not be sold for hatching until the rooster and hens have been together two weeks. The eggs are probably fertile sooner than this, but it is best not to take chances. A rooster will not serve as many hens in fall as in spring, nor a Rhode Island Red as many hens as a Leghorn. If you want good fertility this fall, better cut down your hens to eight.—J. A. K.

Beans for Paso Robles

Please give me information about Henderson Bush Limas and Garbanzos. This is a hot, dry country not well adapted to beans. I have tried Blackeyes, Teparies, Pintos and Pinks. Also have seen Mex. Reds grown here. Of all these the Blackeyes are surest with the Teparies next. They are both low priced beans and the Blackeyes are hard to thresh without splitting and do not ripen evenly. I have been told that Henderson Bush beans do well in hot dry climate, and I saw some in Fernando Valley in September that had made a good crop; but they were irrigated while I must dry farm. The Henderson Bush and Garbanzos bring a good price. I can find no one near here who has raised them, and wish to know if they can be grown here successfully.—Subscriber, Paso Robles.

There are many different conditions to consider in the Paso Robles district. We have seen the best of bean crops grow on the hills while down in the warmer valleys they have not done so well. We are not altogether acquainted with your particular location but as a general thing would not recommend Henderson Bush or Garbanzos for your locality. We believe you will have to content yourselves with either Blackeyes or Pinks as Teparys seem to have lost out on this market.—D. F. R.

RULES FOR MEASURING HAY

In the measurement of hay there are two points to be considered. These are the number of cubic feet required to make one ton and the method of determining the number of cubic feet in a stack.

The following table gives the number of cubic feet required to make one ton of alfalfa at various seasons of setting, these figures being accepted as fair amounts to allow for a ton:

Number of days in stack.	Number of cubic feet per ton.
30	560
60	540
90	512
120	485
Late winter	450

Native hay packs more closely, the usual figure being 422 cubic feet for one ton in a well settled stack.

There are three general methods of arriving at the number of cubic feet in the stack. All three methods will require the width, length and over-measurement. The latter is the distance from the ground on one side, straight over the top to the ground on the other side. Where stacks are irregular, it is best to secure a number of measurements for width and length and the over-measurement, and use the average.

Rule I. One-fourth of the "over" multiplied by the width, then multiplied by the length and divided by the required number of cubic feet to make one ton. This rule gives accurate figures on small, squat stacks when the width is from one-third to one-half of the "over."

Last fall the experiment station bought 98.55 tons by the use of this rule, and when weighed out it weighed 98.18 tons.

Government Rule — Width plus "over," divided by four and squared; then multiplied by length and divided by the number of cubic feet required to make one ton. This rule is satisfactory for large tall stacks of 25 to 45 tons, and favors the seller with ordinary small squat stacks. T. E. Leiper, Colorado Agricultural College.

Book Review

FIRST LESSONS IN BEEKEEPING

"First Lessons in Beekeeping," by C. P. Dadant, editor of the American Bee Journal, and published by American Bee Journal, Hamilton, Illinois.

"This book is especially intended for colleges and schools giving short courses in bee culture. A few years ago such courses were not thought of. But they are annually becoming more numerous. Blind beekeeping is still less profitable than blind farming. The hive has long been a sealed book. It should be opened to the prospective apiarist before he attempts to keep bees. The bee owner who depends upon luck is an obstruction to the success of others, for disease and degeneracy of his bees are sure to follow from his lack of knowledge and method."

The above is from the preface and gives a general view of the scope of book. It touches upon natural history, establishing an apiary, hives, swarming and queen-rearing, improvement in honey bees, comb foundation and its uses, production of choice honey, wintering and feeding, pasturage, observation hives, enemies, disease, marketing honey.

AUSTRIA ADVERTISES FOOD NEEDS

There is food propaganda that is super-propaganda; no missionaries are needed to spread it. The American assurance to the Allies of a bigger and better loaf traveled like light and warmed like sunshine. Headlines and billboards were unnecessary, for it was super-propaganda.

There is super-propaganda, too, that chills like November rain; and in spite of German skill in the art of concealment this kind of propaganda is traveling through the enemy country. Here are some want ads from a Trieste newspaper which tell a story that will not down:

"Iron bed, pair of black trousers, and coat offered in exchange for foodstuffs."

"New novels, large collection, offered in exchange for five pounds of food."

"Finest stockings, lady's colored, in exchange for sugar or fats."

"Linen sheet wanted to make into a dress, for cash or maize meal."

"Yellow canary in exchange for a rabbit, Japanese vases for fats or beans."

"A business suit offered in exchange for one pound of fat."

FINE COTTON

One of the Cultivator field men has sent in a specimen of long staple cotton from Mr. Sanders' ranch south of Chowchilla, which has appearance, to the eyes of the layman, of remarkably fine fiber. It is estimated that the cotton from the particular place where this was grown will run half a bale to the acre. At present prices this will mean a remarkably profitable crop.

ACRE YIELD OF POTATOES INCREASES

In 20 years the productivity of the average potato acre in this country increased 36 per cent. This increase is due to various causes, among which are greater specialization of production, more intensive treatment, and higher fertility of the soil. The ten-year average yield of 97 bushels per acre in 1905-1914 was followed by 96.3 bushels in 1915, 80.5 bushels in the very low year 1916, and 100.8 bushels in 1917.

Compared with population, the yield of potatoes per acre declined from 1866-1874 to 1905-1914. The gain of production per capita in recent years has been more because of increased acreage than because of increased production per acre.

TEAGUE QUALITY

CITRUS TREES

AWARDED THE GOLD MEDAL AT FOUR INTERNATIONAL EXPOSITIONS.

For Productive values, fine quality of fruit and vigorous growth Teague's bud-selected, (pedigreed) properly trained and carefully handled orange and lemon, pomelo and lime trees are the trees to plant. An experience covering a third of a century warrants the assertion that Teague Quality Citrus Trees possess these qualifications in a superlative degree. All the standard commercial sorts, and garden and ornamental varieties; the largest assortment of citrus trees in America, . . . We invite correspondence from intending planters. . . . Consultations on citrus planting by appointment. 1918 Price list just out; send for a copy.

The R. M. Teague Citrus Nurseries

Box 67, SAN DIMAS CALIFORNIA

FOUNDED IN 1889 AT IT 29 YEARS

MICA AXLE GREASE

Easier pulling with Mica Axle Grease because it contains powdered mica, a mineral lubricant, blended with highest-quality petroleum grease by our special process. The mica keeps the spindles smooth and cool —no hot boxes—resists wear and pressure and makes the grease last twice as long. Get a can from your dealer today.

STANDARD OIL COMPANY (California)

Your Soil Needs Amboy GYPSUM

FREE BOOK — GYPSUM FACTS — Tells how, when and what gypsum to apply for increasing crop yield. Gypsum should be used freely on citrus and alfalfa land. Consolidated Pac. Cement-Plaster Co., 614 San Fernando Bldg., Los Angeles.

Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY IT MAKES THEM FAT

Hauser Packing Co. Los Angeles

Classified Liners

The direct selling method from producer to consumer, and a clearing house for over 33,000 readers, weekly.
Liner rates: Single insertion 3c per word; 35c per issue minimum charge.

FARM LANDS FOR SALE

For Sale—My 400 acre grain and stock ranch. Three miles from Pleasant Valley R.R. station, Mariposa County, California; 40 acres now planted to wheat, barley and oats; 100 acres more cleared and tillable, nearly all of the 400 acres could be farmed if cleared from large oaks and other trees; 3 and 6 room house, large barn, windmill and tank, and out buildings, blacksmith shop and tools, ranch fenced and cross fenced, part hog tight. Family orchard and garden irrigated from springs. Average rainfall 29.80 inches. Elevation 1500. The finest climate, summers cool and winters moderate, fine for fruit, no alkali or hard pan, one-half mile to school; $35.00 per acre, including 300 Angora goats, 30 head of dairy cattle, 5 head of horses, chickens and turkeys, and all farm implements and household goods. One-third cash, balance long time, 7 per cent, no trade. Albert F. Zurilgen (owner), Coulterville, Mariposa Co., California.

SNOHOMISH COUNTY, WASH. FARM LANDS. The greatest proposition on the market for the man who wants a farm; 12,000 acres to select from, 3½ miles salt water front, 20 miles of Beautiful Lake Shore, good towns, railways, steam boats, factories, mills, schools, churches, paved roads; where the largest profits are made, where the great variety of crops and wonderful productive climate make it the most productive farm section of America. Good lands in good localities as low as $25 to $35 per acre; 10 yearly payments; send for maps and literature to the BROWNELL LAND CO., 904 Third Ave., Seattle, Washington.

For Sale — One of the Big Producing Ranches of California, income from $20,000 to $25,000 per year. Will sell land, crop, work stock, cows and farming implements for $60,000. Small cash payment to apply on personal property, balance about one-half of the value of crop. Might accept clear Los Angeles residence or income, apartment house or small grove as first payment. Address W. B. Ames, Jonathan Club, Los Angeles, California.

For Sale—10 acres, 626 Valencia oranges, $4000.00 to $8000.00 fruit on; 385 Avocados, mostly Fuerte; 25 miles from Los Angeles on Valley Boulevard. Curbed, cement porches, tennis court, driveway; 11 room house, gas, electricity, domestic water, barn, garages, concreted floors. Irrigating water piped. Going to Arizona for son's asthma. Cash. Box 56, Charter Oak, California.

Ranch, 120 Acres—60 acres under ditch. Good improvements, all farming tools go with the place, also 50 tons of hay. Price $3000. Walter Hufford, Whitmore, California.

Will Exchange beautiful home in Berkeley for good country realty. Address 5809 Ocean View Drive, Oakland, California.

SEEDS AND PLANTS

Try Your Luck growing valuable drug herbs. We have a few thousand Atropa Belladonna plants for sale, one year old roots, dormant, $1.00 dozen, $8.00 a hundred, $50 thousand. First come first served. Money must accompany order. Reference, Pajaro Valley National Bank. Herbert-Vistica Co., R. F. D. 3, Box 107, Watsonville, California.

I Will Have One or Two Tons of Sorghum seed, especially selected for syrup making qualities for sale as long as it lasts. Send for list of different varieties, with description, prices and instructions for planting to get best results. Can send seed by parcel post. MARION GRABER, Hawthorne, California.

Seed Grain — We can make attractive prices on seed wheat and Winter or Gray oats and other field seeds. Have a full line of nursery stock. Supply of seed grain will be limited. Write now. 28 years in business. Carlton Nurseries, Carlton, Oregon.

A Few Sacks Rhodes Grass—Honey sorghum and Sudan seed. Order now all will be scarce and high later. Kelley's Seed House, El Centro, California.

R*O*S*E*S 50c per dozen. Fruit and Ornamental Trees, Plants, Vines, etc. Write for catalogue. KAVAN NURSERIES, San Bernardino, California.

Rhubarb Plants — Wagner's Giant Crimson Rhubarb plants, extra clean, 50 cents per dozen. $3.00 per hundred. Currier Bulb Co., Seabright, California.

New Hybrid Alfalfa—Spreading crown. Big crab-like roots, long lifed, etc. Write J. L. Lawson, San Jose.

Peruvian and Common Alfalfa Seed—Specialty. Write for prices and sample. Box 501 Fowler, California.

MISCELLANEOUS

To Reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

PIPE

"TESTED" and "GUARANTEED" Screw pipe, casing, valves and fittings. Riveted slip joint pipe; all sizes. New and used. "Pacific" pipe for all purposes.
PACIFIC PIPE CO.,
Main and Howard Sts., Est. 1906, San Francisco.

For Sale—5500 ft. 10 inch No. 14 used riveted steel pipe; 3000 ft. 12 inch; 2800 ft. 11 inch; 2000 ft. 4 inch. L. B. Vollmar, Monrovia, California.

FERTILIZERS

Lime—Slaked. Corrects heavy sour soils quickly. H. B. Matthews, 495 Douglas St., Pasadena.

MACHINERY

FOR SALE—WHY BUY NEW?
Windmills.
All sizes.
50 Redwood Galv. Tanks.
Ranch Tools.
Drills, Seeders, Harrows.
Cultivators, Plows.
Material overhauled, guaranteed to do as much as new ones. See for yourself. Pioneers rebuilding machinery, know how.
Buy good machinery.
Manf. new galv. tanks, 1000, 1500, 2000.
DEMMITT CO., Upstairs, 120 N. Main St.

For Sale—One 5 inch Byron Jackson two stage pump; one 6 inch Byron Jackson single stage pump; one 8x10 Rumsey Triplex pump with Morse safety chain and sprockets; one 35 H.P. Fairbanks Morse distillate engine; 900 feet 12 inch steel water main; a number of gate valves from 2 inch to 8 inch. Write for information to L. Judd, Secretary San Ysidro Irrigation District, San Ysidro, California.

SILO CUTTER
for sale
NO. 50 TYHON SILO CUTTER
in excellent condition
FOR SALE CHEAP
COLLINS & WEBB, INC.,
Machinery Dealers,
412 E. Third St., Los Angeles.

For Sale—1 Lambert steel hoof wheel tractor, same as new. A fine machine for road work. Has rubber tires for road and steel grousers for the field. Don't fail to see it. It surely is a bargain, only $800. Wm. Gregory & Sons, 602 North Main St., Los Angeles.

Gasoline Engines, the largest stock of Used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

WANTED

Wanted—I understand farming in every branch, middle-aged, married, no children, would like to take charge and manage farm for elderly people or someone who needs my services. I understand repairing, building, pruning, stock, grain, etc. G. H. Smith, Sisquoc, Santa Barbara County, California.

Wanted Partner in chicken ranch. I have 50 acres land, 20 under 6 foot wire fence. Can raise wheat, barley and Egyptian corn. Want experienced man and wife to furnish stock of chickens and take active charge on share basis. Will furnish house, team, tools, cow, etc. Write owner B,ox 522, Hemet, California.

Wanted—A farmer with ranch to take care of from 50 to 100 head of cattle for one or two years. Will give percentage of increase in weight of cattle and herd or will take ranch on shares of increase of cattle and hogs. Taro Sestino, Rt. 1, Box 143, Modesto, California.

Wanted—25 Guernsey cows, fresh or due to freshen shortly. Must be bought subject to tuberculin test. Write or phone M. H. Adamson, 1120 Trust and Savings Building, Los Angeles, California.

Wanted from one to two hundred second hand smudge pots. State price and condition of pots you have. John A. Then, Manager, Festiva Ranch, Red Bluff, California.

Wanted — Mountain ranch suitable for both fruit growing and stock raising or dairying. Not too large a proposition. Must have plenty of water. Samuel Baumann, R. F. D. 2, Long Beach.

Want to Hear From Owner of Farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

TREES

Budded Avocados — Fuerte, Sharpless, Lyon, Dickinson, Blakeman, Spinks, Taft, Linda, Rey, Queen, Knight and many others. A fine stock of field grown trees. $2.50 for one, $2.00 each by the 100. Better order now. Newberry-Sherlock, R. D. 2, Pasadena; Nursery, Rose and Palm, Altadena, California.

Grafted Walnut Trees—Placentia Perfection and Eureka on northern black roots. Citrus stock one year old from selected fruit bud wood. Also all the leading varieties of fruit and avocado trees. Order your trees early and get the first choice. Geo. M. Ketscher, 702 Orange Ave., Santa Ana. Phone Sunset 229W.

For Sale — Seed Bed Stock, Orange and Lemon Trees, and Avocado Trees of all standard varieties. Walker-Hubbard Nursery Co., San Fernando, California.

Olive Trees—Mission, Manzanillo. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwacofer, Hemet, California.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

For Sale—Extra fine two year old Valencia trees with sour root. S. R. Coate, Anaheim.

Walnut Trees—Placentia and Eureka on black root. La Puente Walnut Nursery, Puente, California. Phone 103.

For Sale—8000 Mission and Manzanillo olives, $800 takes the bunch. York Nursery, Highland, California.

AGRICULTURAL IMPLEMENTS

IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches. ARNOTT & COMPANY, INC.
The Yellow Front. Established 1892.
112-118 S. Los Angeles St. Los Angeles.

LUMBER

Lumber-Sash-Doors-Plumbing - Supplies —Building materials of all kinds. New and second hand "A"R.W. shingles 60c per bundle. Send list for estimates. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco.

HOGS

BERKSHIRES BERKSHIRES

ANCHORAGE QUALITY

We always have a limited number of specially selected pigs for sale sired by Star Leader, now Grand Champion of the World, or by his son Anchorage Leader II. All pigs are well developed and are excellent value for the price asked. All are cholera immune and the Anchorage Farm guarantee is behind each pig. Write today for full information to Anchorage Farm, Orland, Cal.

BERKSHIRES GUERNSEYS

GRAPE WILD FARMS
A few fall boars left by Royal Superbus —also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
A. B. HUMPHREY.
Escalon, San Joaquin County, California.

$25.00 — $35.00 — $50.00
BARON DUKE 201st
Omaha Grand National Champion.
Boar Pigs—3, 5 and 6 months old, from 650 pound prize winning sows. We will sell nothing that we wouldn't use ourselves.
SANDERCOCK LAND CO.,
906 K St., Sacramento,
In charge of Natomas Land sales.

Chester Whites—Billiken Brand.
It is time to start breeding for next spring's farrows. Have only 10 yearling boars left. Get one and have a bunch of good, growthy spring pigs. For December delivery have a nice lot of yearling gilts bred for March farrow. Weaned pigs, both sexes. C. B. Cunningham, Mills, California.

Superba, World's Grand Champion Poland-China boar and one of the greatest sires of the breed. Spring boars ready for service, also few sows bred to this noted sire, reasonably cheap. Rough's Greenfields, Arlington Station, Riverside, California.

We Pay Cash for Hogs of All Sizes, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building. Broadway 4170. 3030 E. Vernon Ave., South 2712-J. Los Angeles.

Big Type Poland China Pigs. With scale and quality out of my mammoth sows and by the best boars of the breed. It will please if it comes from this herd. S. S. Mullen, R. 1, Bellingham, Washington.

For Sale — Two March Duroc boars at $35 and $40 each. Sired by Wonder's Chief Dam Red Bird Lady from Waltemeyer Bros.' Grand Model Stock. W. N. Vandermast, Santa Ana.

Young Boar by OCK'S Chief Grand Champion Ohio and Indiana last year. Dam by Pathfinder's Perfection by Pathfinder. Sterling Smith, Route 1, Box 220, San Diego.

Mule Foot Hogs, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California, "The Blue Gums."

Duroc-Jerseys—We won more money on Durocs at the State Fair than any other exhibitor. Why not get some of this winning stock? June Acres Stock Farm, Davis, California.

Castleview Berkshires are the typey, modern, quick-growing kind, choicest blood lines. Prices reasonable. Castleview Ranch, Berkshires exclusively, Santa Rosa.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

Masterpiece-Superbus strain Berkshires. Choice stock from prolific breeders. Geo. A. Stingle, San Gabriel. Ranch Garvey Ave., two miles SW. of El Monte.

Carruther's Farm Berkshire Hogs — Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition. Live Oak, California.

Poland-Chinas—A limited number sows, bred to our great boar Model Wonder, big type, straight and right. Dimmick Brothers, Lemoore, California.

Start Right — Registered Duroc-Jersey weanlings. Three for $35. Satisfaction guaranteed. Red Rock Ranch, Glen Ellen, California.

Duroc-Jerseys — We breed the champions. Peter, Lamson & Walker, Devore, San Bernardino County, California.

For Real Good Berkshires, cholera immune, write Frank B. Anderson, Box 724, Sacramento, California.

Greenwood Farm Durocs — "Size with Quality." H. C. Witherow, Palo Cedro, California.

Registered Durocs of the big type—Cholera immune. Derryfield Farm. Odd Fellows Building, Sacramento, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Orland, California.

REGISTERED BERKSHIRES. FAIR OAKS RANCH, WILLITS, CALIF.

BIG TYPE POLANDS
W. H. BROWNING, WOODLAND, CAL.

FOR LEASE

To Lease, Large Dairy Barn and fully equipped for first class dairy near creamery, or would consider partner in business for 40 cows. Box 34, El Monte, California. Phone 31, W. El Monte.

For Rent — Lima bean and grain land, proven soil and climate. Earl A. Holcomb, 1023 Washington Building, Los Angeles, California. Phone 62907.

PATENT ATTORNEYS

Patents that protect are secured through The PACIFIC COAST PATENT AGENCY, INC., Savings & Loan Building, Stockton, California; send for our little booklet on "Patents."

CATTLE

Guernseys—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Nevada Guernsey Farm, Yountville, Napa Co., California.

SHORTHORN CATTLE, SHROPSHIRE SHEEP. Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., California. W. P. Dwyer and W. S. Guilford, Owners.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, California.

Registered Shorthorns (beef) calves and yearlings for sale. Both sexes, reds and roans. Choice goods breeding. Fair Oaks Ranch, Willits, California.

Ayrshires (registered) — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

Jersey Bulls and bull calves. Good individuals from producers. Write or come and select. N. H. Locke Co., Lockeford, California.

Elkhorn Farm Ayrshires—For sale young bulls of exceptional breeding and individuality. J. Henry Meyer, R. D. 2, Box 82, Watsonville, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.
Breeders of Registered Shorthorns—Milk

Sunshine Farm Jerseys — Young bull, ready for light service, for sale. E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

For Sale—56 head registered Polled Hereford cows with 30 calves at foot, and 1 bull. Gay Owen, Callpatria, California.

REGISTERED JERSEYS FOR SALE. J. R. CARHART, FULLERTON, CAL.

Registered Guernseys for sale. P. J. Weisel, Santa Fe Springs, California.

POULTRY

Eggs, Meat Going Higher! Great Shortage. Big profit for years sure on really heavy laying strains. Our 200-290 egg Leghorns, Anconas, Reds, Rocks, Minorcas, Wyandottes, Orpingtons, ducks, turkeys more profitable now than ever, clearing $5 yearly. Some best government trapnested hens, 280-283 eggs. Hundreds breeders; laying, younger pullets; thousands chicks weekly; reasonable. Few open dates winter, spring delivery. Last year's prices. James Beeson, Pasadena, California.

Baby Chicks for Sale—100,000 S. C. White Leghorn chicks from heaviest laying (Hoganized) stock for delivery every month in the year, at very reasonable prices. Safe delivery of all chicks guaranteed. Shipped safely anywhere West of the Rockies. No money in advance; pay on delivery. Finest hatchery in the world. Established 1898. Further information write Must Hatch Incubator Company, 438 Seventh St., Petaluma, California.

Heavy Laying S. C. Reds—Large vigorous cockerels and yearling males directly descended from New York, Boston, Los Angeles winners, $5.00 and $10.00. Satisfaction or money back. W. M. Marquam, Bishop, California.

Model Poultry Farm — White Leghorn Specialists. Our fifteenth year in business. Baby chix and hatching eggs for sale, also first class breeding cockerels. Our prices are right. W. C. Smith, Prop., Corning, California.

White Leghorn Baby Chix from heavy laying (Hoganized) stock; $15.00 per 100. We guarantee safe arrival. The Pioneer Hatchery, 409 Sixth St., Petaluma, California.

Chix—Barred Rocks, R. I. Reds, Orpingtons, Anconas, Minorcas, Buff, White and Brown Leghorns. Breeding Cockerels. Enoch Crews, Seabright, California.

For Sale—Two 500 Petaluma Incubators $30 each; 25 pullets beginning to lay, Brown Leghorn, $1.00 each. Stamp for reply. Mrs. G. M. Guerard, R. 2, Box 26, Merced.

Blue Andalusian Cockerels—A fine well developed bunch from heavy laying strain. Get your order in early. Prices reasonable. J. R. Huddleston, 342 Edgeware Road, Los Angeles.

Wanted—1000 POULTRYMEN to try the New Perfection Automatic Poultry Fountain. None better. Free circular. John Imschweiler, Inglewood, California.

"Eastman's Bred-to-Lay" Hoganized and trapnested Barred Plymouth Rocks. Cockerels, Eggs. Fairmead Poultry Farm, Fairmead, California.

Black Orpingtons Lay, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, California.

Buff Orpingtons — Five extra fine Buff Orpington Cockerels; also a few pullets. No culls—do not have them. J. J. Dean, Moneta, California.

For Sale—30 White Pekin ducks 5 months old from our winners at Pacific Coast Land show. A. O. and P. M. Forster, 2916 Otis St., Berkeley, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona Cal.

TURKEYS

Bronze Turkeys—Mammoth Bronze Toms and hens for sale. Place orders now before prices advance. Also Collie dogs for herding. John G. Mee, St. Helena.

For Sale—Mammoth Bronze Turkeys, the Best in the West. Geo. A. Smith & Son, Corcoran, California.

ENGINES

Several New and Slightly Used Engines. ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

RABBITS

Pine Ridge Rabbitry, Monterey, California. A fine line of Flemish Giants, New Zealand Reds and Long Haired Blacks. All stock guaranteed. Write for particulars.

Money in Rabbits
Raise rabbits for us. Will pay $6.00 per pair. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

For Sale—New Zealand Red. Utility and pedigreed stock. Reasonable prices. Stephen E. Banneck, 330 E. North Hicks Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giant, young stock. Paul Kruger Watsonville California

GOATS

Largest Herd Swiss Toggenbergs on the Coast. 100 grade does bred to my $1000 Buck, Captain No. 256, A. M. G. R. Association, due to kid in February and March, $40.00 each, lots to suit. Crating $2.00 extra. Stamp. Rae P. Williams, Oakland, California.

For Sale or Exchange—Registered Saanen buck nine months. Thoroughbred. 15|16 Toggenburg buck, hornless. Correct marks and color, nineteen months old. Mrs. Zufich, Chittenden, California.

Milch Goats—Half Saanen doe bred to Nublan; valuable breeder, free persistent milker, $60.00. Also others. Miss B. Stocker, Freestone, Sonoma Co.

LIVE STOCK

Sixteen Weanlings, 11 yearling mules all from same Jack. Some good horses. If sold soon can be bought reasonable. Chas. Hubbard, Riverdale, California.

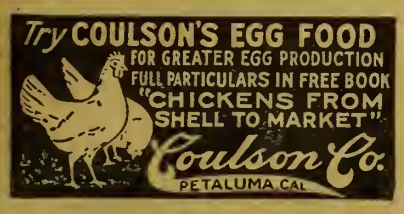
For Sale — One pure blood imported French Percheron stallion, also few young work horses. L. E. Stockton, Ramona

CAPON SPECIALIST

Every Farmer can make money by caponizing his cockerels. Instruments $4.50. Caponizing cockerels 20c each. Send stamps for reply. Mrs. H. Ament, 1923 18th St., Santa Monica, California.

CAVIES

For Sale—Solid and broken colors. J. E. Love, 1845 N. El Molino St., Pasadena, California.



Chickens Sick?—Use Germozone
Roup, colds, bowel troubles, sore head, limber neck, etc. At dealers or postpaid 75 cts. with 5 book Poultry Library. GEO. H. LEE CO., Dept. 418 OMAHA, NEB.

THE 200-EGG HEN

Written for California Cultivator
By Jean A. Koethen

IF THERE were ever any doubt of the existence of the 200-egg hen it has long ago been dispersed by the performance of hens in the various laying contests that have been held the past five years or so. Some authority has said that the only egg records that can be relied on are those of these contests, where those who keep the records are entirely disinterested and where every record is certified. How true this may be I do not know. It is very easy to make mistakes in keeping an egg record, especially when the keeper has a thousand other things to do, and those kept in a contest where the attendants give their undivided attention to this very thing should certainly be more dependable.

According to the report of the Second All Northwest Egg Laying Contest, which was held at Pullman, Washington, during the 11 months ending October 1, 136 birds out of the approximately 600 entered laid over 200 eggs each. This is regarded by the new contest director, Professor Mitchell, as a remarkable performance. If 25 per cent of all the hens in our henneries and farm flocks did as well the poultry industry would be on a firmer footing than it is at present. Sixty-seven per cent of all the hens in the contest laid 150 eggs or over in the 11 months, and yet we are told that the 150-egg hen is comparatively rare in farm flocks.

These hens in the contest are, of course, the picked birds of the Coast, most of them being from Oregon and Washington. There were five California entries, one of them being a pen of Blue Andalusians owned by J. R. Huddleston of Los Angeles. Idaho and British Columbia were also represented. Obviously, no one would think of sending a pen to such a contest unless he were satisfied himself with the work of his hens, but if one person can bring his hens up to such a satisfactory production, others can do the same thing. There will be more 200-egg hens in the flocks of the whole Pacific Coast because of what the hens at this contest have done.

It is a pity that this contest cannot be held for 12 months instead of closing at the end of the 11th, but on account of the limited accommodations at their disposal, those in charge find it necessary, if they are to begin a new contest November 1, to close the preceding one October 1. This gives a month in which to get the old birds out and the new ones in. However, if a month must be omitted, October can best be spared, for the hens are in full molt by this time, and their year's record nearly completed.

The figures which interest us most in this report are those showing what hens laid the highest number of eggs, and the value of the eggs. The best hen, we are not surprised to learn, was a White Leghorn from Salem, Oregon, that made the remarkable record of 287 eggs. Who knows but in another month she might have rounded out a full 300? The second hen was a R. I. White with 264 eggs to her credit. Then come three more Leghorns, followed by a Barred Rock that laid 254 eggs; two more Leghorns, then a R. I. Red with a score of 248. There were 22 hens with an average of 237 eggs or over, and 14 of these were White Leghonrs. Of the remainder, three were R. I. Whites, three R. I. Reds, and two Barred Rocks. The value of the eggs laid by White Leghorn No. 251, the highest scoring hen, was $10.76, and the lowest on the honor roll of 22 hens brought in $8.84. Looking at these figures, our first question is, what is the net profit to be expected from such a producer? This final report gives no figures as to feed cost but a careful feed and egg summary for the month of July showed that the feed cost per dozen eggs for White Leghorns was 17.8 cents, and the return above feed cost for the average White Leghorn 40 cents. According to these figures, which would doubtless be approximately correct for the whole year, the cost of feeding the 287-egg hen was $4.27, and the value of her eggs above feed cost over $6.00 while the 237-egg hen netted $5.34.

We shall probably get a better idea of the actual cost of feeding these birds if we take the figures for the cost of feed per bird regardless of production. We find that in July it cost 29.59 cents to feed a Leghorn for the whole month, 33.144 cents to feed a R. I. Red and 37.28 to feed a Barred Rock; this higher cost of feeding heavy birds must always be considered, for it takes just so much from the net profit. To be sure the carcass of the Rock is worth more when she is through laying, but it ought to be.

One sentence in this report of Director Mitchell is especially significant: "In order for birds to make high records during the year, it is necessary for them to get the laying habit early in life and to stay close by it." White Leghorn No. 251 laid 29 eggs in November, 27 in December, 28 in January, and not less than 24 eggs any month in the year. R. I. White 23 started in with 23 eggs in November but reached a maximum of 27 in January. White Leghorn 81, the third on the honor roll, made a less conspicuous start, for she laid but 15 eggs in November, but from this time on she kept above 20. Truly, the "laying habit" is important and the hen that lags at the beginning of the race is liable to prove a laggard all the way through.

BEE KEEPING SHORT COURSE

A full course in bee keeping will be given at Visalia, December 4-14. This is under the auspices of the Tulare County farm bureau, which announces:

Some of the best posted people on bee keeping in the United States will take part in this school. Dr. E. F. Phillips, head of the division of apiculture of the United States department of agriculture, will be the principal speaker. Dr. Phillips is sufficiently well known to most bee keepers to warrant a good attendance. Professor Coleman, Professor Clark, George S. Demuth and E. R. Root will also be on the staff.

The government is still calling on us to produce more food, and to save sugar. The production of honey will help solve the sugar problem.

A good live program has been prepared and it is expected that about 200 people will be in attendance at these meetings.

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LACTEIN—The greatest of all Chicken and Hog Feeds and Tonics.

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QUESTION 2—Suppose that the hens' combs were white, or that the chicks were constantly picking at the toes and tail feathers of their mates, and you knew of some product (namely "LACTEIN") that would correct this,

QUESTION 3—Suppose that the young chick had no vitality, was sleepy looking, needed more red blood, and that it was in your power to have a quick and positive remedy for this,

QUESTION 4—Suppose that the hens you expected to do so well, were moulting, that their wattles were white, their legs white, and that they were producing about one egg to every three hens, notwithstanding the fact that you were feeding them plenty of high priced materials which produced yolks, but lacked material to make albumen for the whites,

QUESTION 5—Suppose that there was no question but that you could increase your production from fifteen to forty per cent in from fifteen to twenty days, by using a product which would cause the food to assimilate, and build up their system at the same time,

QUESTION 6—Suppose that you were depending on your hogs to pay off the mortgage, or to buy your new car, and you found, when the mortgage came due, or the agent for the car came to see you, that your hogs had not gained in weight, due to indigestion, worms, or cholera, or poor assimilation, and you knew there was a product on the market which was both a food and tonic that would insure that needed gain, purifying their blood, and assimilate their food,

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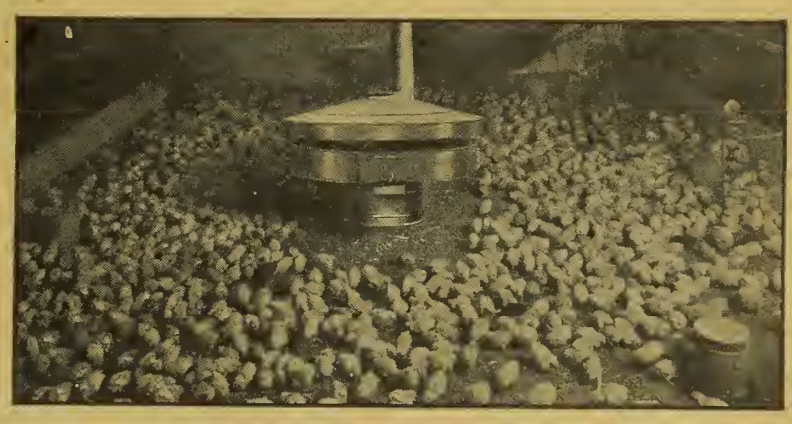

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When baking cookies, turn the baking pan inside down and place cookies on bottom.

Household Department

A FREE LANCE O' TH' SOD

I hain't hed no heap o' learnin',
I'm not counted much fer looks,
I'm not swift et money burnin',
I hain't read them flowery books;
But I got my own small garden,
An' a hen roost, an' a cow,
An' them pigs ye see a rootin'
'Ith thet fine ol' Berkshire sow.
An' thet barn, thar, in th' distance,
'Ith th' wood lot jest beyond,
An' thet meadow, thar, fer instance,
An' them ducks out on th' pond;
An' thet stack o' garnered barley,
An 'th other one o' oats,
An' them hosses—say, now, really,
Hain't they got th' shiny coats?
Them's all mine. An' so's them acres
Green an' golden in th' sun,
An' they hain't no mortgage papers
Laid ag'in' a single one.
An' off yander in thet cabin
I've a wife an' kids as well,
Thet is jest as loved an' lovin'
As though I was a swell.
An' when I'm hum et evenin',
Mebby feelin' somewhat tired,
I know no Boss hain't comin'
Round t' say t' me "Yer fired!"
Fer I hain't no fear o' masters,
'Ceptin' o' th' Master, God,
'Cause I'm browsin' midst th' Pastures,
A Free Lance o' th' Sod.

—Edwin F. Van Vechten.

HOW SHE PROPOSED

"WIMMEN are a queer lot," said the old fishermen. "They remind me most of a crab. If you expect a woman to move for'ard she goes back; if you expect her to go back she goes for'ard. And if you don't know which way she's goin' she moves sideways.

"Anyway, the only gal I was ever stuck on went that sort of a gait as long as I knew her as a gal. She was the daughter of a man who owned one of the best farms ten miles back of the coast and with a lot o' money in bank. Phoebe was the only child of her parents, and it was ginerally suspicioned that when the old man died she'd git it all.

"I was a husky young feller in those days and was in my element when in my boat. She was a single sticker with a jib, and I reckon I knew how to sail her.

"I was fishin' in those days, but in midsummer we was shut off from takin' lobsters and the mackerel are hard to get. Now and then I got a chance to take out sailin' parties. When Phoebe came down she always had money her dad had given her for spendin', and she used to invite sailin' parties to go out with her. My boat seemed to be her favorite, though my reputation for sailin' in a fog or at night might have had somethin' to do with it. At any rate, Phoebe always took my boat when she could get it.

"She was mighty fond o' the water, Phoebe was, and when she had nothin' else to do would come down to the dock and just loaf around. One mornin' she came down when I was startin' out to place my nets.

"'If you'd like to go with me to the fishin' grounds,' I said, 'you're welcome. I'm comin' back after placin' the nets, and I'll bring you right here.'

"She looked doubtful, but mighty sudden she jumps down on to the deck. I loosed the painter and pushed off. There was a good breeze and we sailed along in the sunlight.

"Maybe I wasn't a happy younker! Talk about work, it warn't work at all, although it was makin' a livin'. Phoebe was gay and pert as a little red squirrel. I took her out to the fishin' grounds to the lee of Black Island and brought her back in time for noon dinner, and she seemed to have enjoyed herself better'n when we had sailin' parties aboard.

"After that Phoebe used to go out with me a good deal. The bay was always full o' boats, and she often hailed friends o' hers. Sometimes they tried to persuade her to leave me and go with them, but she wouldn't. She told me she liked it better to have the whole run of the boat than sittin' bolt upright in a crowd ranged around the gunwale.

"When we went out in the mornin' the bay was usually quiet, but if we came back in the afternoon there was apt to be a stiff wind that kicked a sea which made a small boat uncomfortable. One morning Phoebe came down to the dock with a lunch box and asked if I was goin' to the fishin' grounds. I knew by the box that she calculated to make a day of it, so I said I was goin' and wouldn't come back till afternoon. That suited her. She got aboard and we sailed away.

"That afternoon the wind came on to blow fiercer than I had ever known it except in a regular storm. In order to make a straight course for home we had to take the wind and sea on the for-ard quarter, which wasn't comfortable, seein' that the boat soon was half full o' water and we was both wet as drowneded rats. But this wasn't the wust of it. It blowed harder and harder, and after awhile I almost wondered if so small a boat would live in such a gale.

"Phoebe sat down, backed by the cabin, watchin' me. There's somep'n for a woman to look at in a husky man fightin' wind and waves, and I could see admiration in Phoebe's face. She didn't seem a bit afrald, so long as I was at the tiller.

"When I luffed up to the pier and saw Phoebe jump up on to it I felt a big relief. She stood up there smilin' at me, and she says:

"'That's a sail as is a sail. Not one of your little pleasure excursions for wimmin and children.'

"'Just so,' says I, hopin' I'd never git caught ag'in in such a blow with a gal aboard, especially that gal.

"By this time I was desprit in love with Phoebe, and I was miserable, for it warn't to be expected that I would ever speak the word to a rich farmer's daugbter, I bein' nothin' but a fisherman, makin' little or nothin'.

"September was comin' on. Phoebe tole me to come up to the house, where she was, and she would settle some accounts tbere was between us. I went, and she had it all figured out that she owed me $1.37.

"She went upstairs to git tbe money, and she stayed so long tbat at last I looked around for somep'n to interest me. I got up and walked about the room. There was a partly finished letter layin' on the desk. Witbout thinkin' what I was doin' I read a few lines, and they was the most important lines to me I ever read. They just made my heart thump like a hammer splittin' logs.

"When Phoebe came in with the money she owed me I caught her in my arms.

"What I want to know is why she couldn't have let me know she wanted me in a plain, straightforward way, without writin' to a friend and puttin' it where I'd see it?"—F. A .Mitchell in Exchange.

CHAYOTES GOOD TO EAT NOW

Written for California Cultivator

Chayotes are providing good eating these fall days. The quickest and easiest, and many think the best way of cooking them, is to halve, peel, remove the seed, slice thin or dice and drop in a kettle in which is a little hot fat (a tablespoon is sufficient for four chayotes). Put on cover and cook on moderate fire for five minutes or longer, shaking once or twice to assure that the vegetable will not stick. When you think it is getting near the "sticking point" add a little boiling water, just enough at a time to keep from sticking. Add salt to taste and a little black pepper. Cooked in this way the chayote is mealy, sweet and delicious. Ten minutes is long enough to cook perfectly.

Roasted With Meat

Halve, peel and seed chayotes; place about roast meat as you would potatoes. If roasting pan is covered so that tbe chayotes steam as well as roast they will cook in a half hour or less.

Chayote Fritters

These are made on the same principle as corn "oysters." Put one large chayote through food grinder—this will make about one cup,—grind a cup of bread crumbs. Add salt and pepper and cover with two cups of sour milk. Let stand for a few minutes to soak into the dry crumbs. Stir in a cup of flour, a large teaspoon of baking powder and just a tiny bit of soda, enough to take away the sour taste of the milk. One or two eggs added is delicious, and a little sweetening also is an addition, though the chayotes are sweet themselves and add enough sugar to make the fritters "lickin" good. Bake on moderate griddle in small spoonfuls.

Tomato Gravy

By the way, here is something that,

The Cultivator Patterns

9064—Girls' Dress. Cut in sizes 8, 10, 12 and 14 years. The dress buttons from neck to hem.

9049—Ladies' and Misses' Shirtwaist. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. The sleeves may be made either long or short.

8688—Ladies' Waist. Cut in sizes 36, 38, 40 and 42 inches bust measure. The shoulder edges of the back extend over and the fronts are gathered.

9067—Misses' or Small Women's Dress. Cut in sizes 14, 16, 18 and 20 years. The neck is cut in U-shape and the dress fastens at the left shoulder and underarm seam.

9051—Ladies' One Piece Apron. Cut in sizes 36, 40, 44 and 48 inches bust measure. The round neck is bound with contrasting material.

8695—Girls' Dress. Cut in sizes 6, 8, 10, 12 and 14 years. The dress has a removable chemisette with collar, and sleeves may be made long or short.

9083—Ladies' One Piece Plaited Skirt. Cut in sizes 26, 28, 30 and 32 inches waist measure. The skirt is plaited at each side of the front to give the effect of a wide panel.

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Los Angeles.

added to the chayote cakes, or fritters, makes a particularly good Sunday breakfast, or supper any day.

Cut four strips of bacon in tiny cross slices, cook rather slowly, turning several times with cake turner to get an even golden brown — some cooks can even spoil bacon. Take out bacon and leave on pan in warming oven. Make gravy in the hot bacon grease by adding one heaping tablespoon of flour, smoothing quickly to get out all lumps. Add boiling water and milk to make of gravy consistency. Add cooked tomatoes—four medium sized ones make about the right quantity—season with salt and pepper, add the frizzled bacon and serve with the chayote cakes.

RAGBAGS

Written for California Cultivator
By Linda W. McNeil

HAVE you looked over the possibilities of your ragbag? Perhaps you might be as surprised at the result as I was.

In looking through the contents of an old trunk, which is used as a container for odds and ends, in search of a piece of cloth to mend a garment, several discoveries were made.

First an old white French lawn dress, discarded several years ago because its lace trimming was badly torn, caught my attention. I looked it over. The cloth was good, and in these days of soaring prices the cost of it would be something to remember. It was made in the generously full style of ten years ago, so there was material to work with. "Just the thing for the new waist you need and do not know where the price is coming from."

Two tablecloths were next brought to light; both were badly worn and had been tucked away to make into everyday napkins "sometime." A blue gingham house dress, the waist beyond repair, was the next find. Then a white voile waist with the sleeves torn at the seams, because they had been too tight, was found, and then the looked-for piece for mending was found and the search ended there—for the time.

From the French lawn I made a waist full and plain with a large lace trimmed collor. The house dress was made into an efficient kitchen apron. The voile waist was rejuvenated with a pair of full half sleeves of old India linon, one of the table cloths, carefully patched and darned, adorns the dining table, the other shall do likewise in the future.

Do you know how beautifully a tablecloth can be mended by putting a piece of bobbinet under the thin place, or even holes if they are not very large, and then darned carefully with fine thread? Even a real big patch if well ironed does not look too bad on the table in these times of strict economy, when we are all putting our money into the various branches of war work and so are short for some of our own needs.

If we will take it to heart and learn it, there is a valuable lesson for us free spending American women in all this conservation. Shall we learn it, I wonder? Shall we continue to live as plainly and simply after the need for economy has gone by, or shall we go back to the old extravagant ways?

One thing I am quite decided upon. I shall guard my ragbag, that usable garments may not find their way there and be kept from giving their full share of service to me or some other person.

RESULTS COUNT

The American: "What happened to you?"

The Tommy: "To tell you the truth, I ain't quite certain. About ten minutes ago Iwas 'avin' a tete-a-tete with a German sapper. He was a nice-lookin' boy—'ad a face like a murderer. We was crawlin' on our stummicks, when we come face to face. He says somethin' to me in German, an' I answered him in just as bad language."

"What happened then?"

"Well, I 'ates to brag; but I'm 'ere an' 'e hain't!"—Exchange.

Are there castors on your work table? Often it is a real convenience and saver of steps to roll the work table near the sink or stove.

CORNMEAL ONCE A DAY

Cornmeal is a good food because it is a cheap source of energy. The nutrients are so closely bound with the fiber, or roughage, that long cooking is required to soften the fiber and make them available.

More liquid should be used, and more fat may be used, with the very fine cornmeal made by the new milling process, than with the coarser meal made by the old process or ground at home. The home grinding of cornmeal saves the germ and certain other nutrients that are lost by the new milling process, but, on the other hand, the meal thus ground does not keep so well as the finer milled product.

Cornmeal Mush

One cup cornmeal, one teaspoon salt, three and one-half to five cups boiling water, or scalded milk, or milk and water.

Slowly sift the cornmeal into the hot liquid, or mix it with sufficient cold water to give it the consistency of a pour batter and add it to the remaining hot liquid in the upper part of a double boiler. Cook the mixture over direct heat, stirring it constantly until it thickens; then cook it over hot water for about four hours. Or use a fireless cooker container instead of a double boiler, and as soon as the mush has thickened place it in the fireless cooker for five or six hours or overnight. One cup or less of raisins, chopped dates, or figs may be added just before the mush is served.

Left-over cornmeal mush may be poured into a pan wet with cold water. When it is cold it may be sliced, rolled in dry meal, browned in a small amount of fat, and served with syrup. Another way of using it is to cut it in cubes, fry them in deep fat, and serve them with syrup or tomato sauce.

If the mush is to be fried it should be made stiff by using the smaller proportion of water. For a breakfast cereal more water may be used, the amount depending on the consistency desired.

Scalloped Cornmeal and Cheese

Into a buttered baking dish pour thick cornmeal mush and cheese sauce in alternate layers, using about one cup of sauce to two cups of mush. Cover the top with buttered crumbs, and bake the mixture for 39 minutes in a moderate oven.

Cheese Sauce

Three tablespoons butter, three tablespoons flour, one cup milk, salt, paprika, one cup cheese, grated.

Melt the fat, remove the pan from the heat, add the flour, and stir the mixture until it is smooth. Add the milk, return the pan to the heat, and cook the sauce until it thickens, stirring it constantly. Place the pan over hot water, add the cheese, and allow it to melt.

Southern Spoon Bread

Two cups scalded milk, one and one-half cups cornmeal, one teaspoon salt, two tablespoons fat, one or two eggs.

Sift the meal and the salt into the scalded milk. Cook the mixture for five minutes in a double boiler, and add the fat. Allow it to cool. Add the yolks of the eggs, and fold in the well-beaten whites. Turn the mixture into a well greased baking dish, and bake it in a moderate oven for 30 minutes. Serve it hot in the baking dish.

Peanut Scrapple

One cup fine cornmeal, one cup hominy grits, two teaspoons salt, two quarts boiling water, or milk and water, one cup ground peanuts.

Sift the cornmeal and the grits into the boiling salted water, stirring it constantly. Cook it for at least one hour, stirring it occasionally. Five minutes before removing it from the fire, add the peanuts. Pack the mush in a deep pan, and store it in a cool place. When ready to use it, cut it in one-half inch slices, and brown it in a small amount of hot fat.

Grated cheese may be substituted for the peanuts. When ready to use the scrapple, cut it in cubes, roll them in grated cheese, and pile them on a greased tin. Bake them in the oven until the cheese is toasted.

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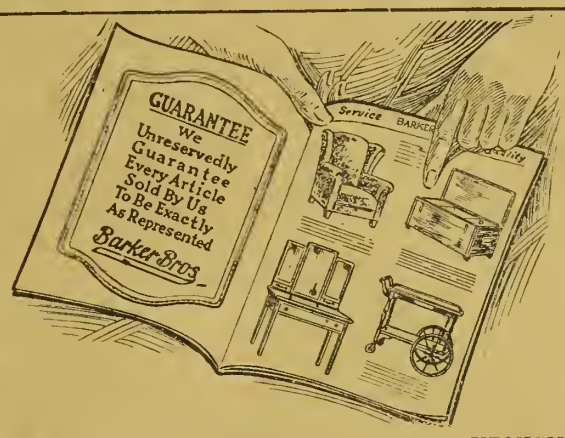

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Aggeler & Musser Seed Company have pursued the theory that there is some line of vegetation suited to each and every condition of soil and climate, and systematically went about to discover that vegetation and systematically educated the grower how to plant, when to plant and where to plant each particular vegetable to attain success.

Their latest enterprise is the introduction of Grasses and Forage Plants for the now unproductive.

At their booth in the Agricultural Building, Liberty Fair, Exhibition Grounds, you may see samples of grasses, sorghums and millets suitable for every condition of soil and climate.

Do not fail to see it. It may open some valuable suggestion to you.

Always on the alert for something better, some aid to agriculture, Aggeler & Musser Seed Company endeavored to grow potato seed perfectly free from disease, with only partial success; therefore, to make success complete, they have installed a large vat for the purpose of dipping all potato seed into a solution of Corrosive Sublimate, which will destroy the disease of scab and Rhizoctonia, making clean seed, which will produce more and better potatoes. This innovation is a great boon to growers in Southern California, where it is so much needed.

The growth of the Aggeler & Musser Seed Company has necessitated larger quarters. They are now installed in their new store in the Meredith Building, 620 South Spring Street. The retail department on the first floor, the offices on the second floor and the mail order department on the second and third floors. Their mill and warehouse is at Sixth and Alameda.

Be sure to write for their catalog, and remember the new address.

AGGELER & MUSSER SEED COMPANY

620 South Spring Street

Los Angeles, Cal. Phones 60875; Main 4545

Los Angeles Market

Los Angeles, Nov. 26, 1918.

BUTTER

Produce Exc. Quotations.
Prices to tradc 1½ to 2½c higher.

Cal. Extra Creamery 60

Nov.	20	21	22	23	25
'18	58½	58½	58½	58½	60

CHEESE

Brokers' prices:
California fresh, lb. 31

EGGS

Exchange quotations. Price to retailers 2 to 3 cents higher.

Fresh extras 73
Case Count 63
Pullets 59

Dairy Exchange prices past week on fresh extras:

Nov.	20	21	22	23	25
'18	72	72	72	72	73

LIVESTOCK

The demand for good fed steers is increasing and premiums are being paid, over former prices, for good cattle in order to fill the existing export and domestic demands.

On account of the keen demand for the better grades there is widening in the spread between the top and bottom levels.

Receipts of range stuff are, naturally slackening. The supply of cows is adequate to meet demands, but fewer are arriving than during the last two or three weeks.

Hogs of desirable weights and quality are bringing top prices quoted. Quite a lot now reaching the Los Angeles market lack finish, and, in some cases, are too light. This market likes a handy weight hog, say, 175 pounds to 200 pounds.

The lamb market is firm on all grades. The wether market is strong, with good wethers scarce. Ewes are weak; the demand light, and the market dull and draggy.

Report of live stock conditions on the Los Angeles market as compiled by the United States Department of Agriculture, Bureau of Markets, through the local office:

Good Steers .....12.50@13.50
Medium Steers .....11.00@12.00
Common .....9.50@10.00
Good Cows .....8.00@9.50
Medium Cows .....7.00@7.50
Common and canners .....5.00@5.50

Prices quoted below are for carload shipments. Driven-in, or truck hogs sell for ½ cent less:

Hogs—
No. 1 hogs, 150-200 lbs. .....16.00@16.50
No. 2 hogs, 250-350 lbs.....15.50@16.00
Sheep—
Lambs, 65-80 lbs. .....15.00@15.50
Wethers .....11.00@11.50
Ewes .....7.50@9.00

POTATOES

Wholesale selling prices:

Burbanks .....2.25@2.50
Sweet, lug .....65@85
Inyo Russett .....2.25@2.35

ONIONS

Wholesale selling price, cwt.
Australian Brown, lug .....1.75@2.00
White Globe, cwt. .....3.75@4.00

VEGETABLES

Wholesale prices:

Beans—String .....7@8
Limas, lb. .....7@8
Cabbage, cr. .....1.75@2.00
Carrots, doz. .....40@45
Cauliflower, cr. .....2.00@2.25
Celery, cr. .....2.50@4.00
Egg Plant, lb. 5
Lettuce, cabbage cr. .....85@90
Parsley, doz. 15
Peppers, Chili, lb., 5@5½; Bell, lug.....85
Pumpkins, lb. best .....1@1½
Rhubarb, bx., Crimson, ...75
Strawberry .....90@1.00
Radish, doz. .....15@20
Spinach, doz. 20
Squash—Hubbard, best, lb. 2
Tomatoes, unwrapped, ripe lug...60@1.10
Turnips, doz. .....35@40

FRUITS

Apples—Bellefleurs, bx. .....1.60@1.85
Yucalpa Delicious .....2.75@2.85
Pearmains .....1.75@3.00
Newtons .....1.50@1.65
Cranberries, Ore., Wash.,
1-3 bbl. bx. .....3.75@4.00
Grapes—Homegrowns, best per pound, Tokays, 8; Cornichons, 7@8; Malagas, 8; Muscat, lug, 2.25@2.50.
Pears — Bartletts, stor. lb., 9; D'Anjou, lb., 7; Winter Nellis, lb., 6@7.
Persimmons, lb. .....3@8
Quinces, lug. .....85@1.25

CITRUS

Oranges—Off bloom Navels packed small, 6.00; large, 5.00 bx.; Tulare County, new crop Navels, medium sized fy., 7.00@7.75.
Grapefruit—Tulare County Seedless, fy., 3.75@4.00 bx.; Arizona Seedlings, loose, 6c lb.
Lemons: Fy. packed 4.75@5.00 bx.; loose, 4.00.

HONEY

Cash to producer on farm:
Extracted Light Amber, Sage and mixed in small lots, 21@21½, lb.; White Sage and Orange, supplies practically exhausted, very few sales, 22@22¼; Light Amber and Alfalfa, mostly 20@21 lb.; Comb 24 section cases, No. 1, 5.50 case; Beeswax, 36@37 lb.

BEANS

Price to retailer, cwt.:

Pinks .....7.50@8.00
Tepary 5.00
Lima 11.50
Large White 10.00
Small White 10.50
Blackeyes 6.25
Garbanzos 11.00
Lentils 25.00
Kidney 12.00

HAY

Quotations by Nichols - Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

No. 1 Tame Oat .....26.00@28.00
No. 2 Tame Oat .....23.00@25.00
No. 1 Barley .....22.00@24.00
No. 2 Barley .....19.00@21.00
No. 1 Alfalfa .....20.000@22.00
No. 2 Alfalfa .....17.00@19.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS

Prices offered on exchange. For federal price see San Francisco market:

Utah No. 1 white oats 2.50
Portland standard oats 2.50
Eastern white oats No. 2 .....2.50
No. 1 bright feed barley 2.27½
Milo maize, local 2.54¼

San Francisco Markets

San Francisco, Nov. 25, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapped, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:

Extras 61

Nov.	19	20	21	22	23
'18	61	61	61	..	61
'17	40	41	43	43	42½

CHEESE

Dairy Exchange quotations:

Cal. Flats 32
Ore. Triplets 34½
Jack, full cream 30

EGGS

Dairy Exchange quotations:

Extras 80½
Selected Pullets 63½

POULTRY

Nov.	19	20	21	22	23
'18	78½	75	76½	..	80½
'17	56	57	59	57½	56½

We quote to producers, lb.:

Large hens, 31@35; broilers and fryers, ¾ to 1½ lbs., 40@42; 1½ to 2 lbs., 38@40; 2 lbs. and over, 35@36; old roosters, 23@24; young roosters, 31@35.
Belgian hares, live, 20@22.
Jack Rabbits, doz. 3.25@3.75.
Squabs, 3.50@5.00.
Turkeys, dr., 36@42; live 32@35.

LIVESTOCK

Prices gross weight:

Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.

Steers, lb., 11@12¾; thin, 8½@9½, cows and heifers, 7½@8¾; thin, 5½@6½; calves, 8¼@11¼.

Sheep — Lb. gross weight: Wethers, 11½@12; ewes, 9@9¼; lambs, yearlings, 12@12½; milk, 14@14½.

Hogs—Hard grain fed, weighing 100 to 140 lbs., 16; 140 to 250 lbs., 16½; 250 to 325 lbs., 10.

POTATOES

Wholesale selling prices at wharf, cwt.:

Potatoes, cwt. .....1.75@2.40
Sweets, lb. .....2½@3

ONIONS

Wholesale selling price on wharf, cwt.:

Australian, Brown and Yellow..1.00@1.25

VEGETABLES

Wholesale selling price:

Artichokes, doz. .....75@1.10
Beans, String, lb., 5@14; Limas.....6@7
Brussels Sprouts, lb. .....5@6
Cabbage, lb .....¾
Carrots, sk. .....75@1.00
Cauliflower, doz. .....50@85
Celery, doz. .....50@70
Cucumbers, hothouse, bx. of 30.2.00@2.50
Lettuce, doz. .....20@35
Southern Iced, cr. .....1.75@2.00
Peppers, Bell, lug, 75; Chili 75
Egg Plant, lug. .....1.75@2.00
Mushrooms, lb. .....15@25
Peas .....14@15
Pumpkins, sk. 75
Rhubarb, bx. .....1.25@1.50
Squash—Cream .....75@1.00
Hubbard, sk. .....1.25@1.50
Tomatoes, lug .....1.25@2.25

To California Fruit Growers

You are careful about the bank with which you deposit your money. You carefully investigate the tractor or other farm implement before buying. You want to know all about the automobile you buy. These are all important.

You should investigate and understand the quality of the tree spray you use. There's one way to be sure, and that is the brand. It is a well known name. Have you tried it before? Have your neighbors tried it? Has it proved successful? Altogether successful?

We maintain a bureau of information concerning orchard operations, especially spraying. Bulletins giving the best available information concerning the treatment of insects and tree diseases will be sent you on request.

Our entomologist, Mr. S. W. Foster, was for many years with the United States Bureau of Entomology, in close relation with the fruit growers of the Pacific Coast.

Your trees and your next year's crop depends largely upon the quality of the sprays you use this winter. It is too serious a matter to leave to chance. Use the recognized quality for the sake of security. Here is one place where looks don't count. The brand is the whole thing. Know the brand.

ORCHARD BRAND tree sprays are sold all over America. They are the acme of fruit tree sprays.

ORCHARD BRAND Lime Sulphur Solution

ORCHARD BRAND and Prepared Bordeaux Mixture

for spraying peach trees and almond trees to control blight and shot-hole fungus are the standard tree sprays of the nation.

UNIVERSAL brand oil sprays, for spraying deciduous fruit trees during the winter season, are highly concentrated, and the only quality you would buy if you knew all the facts.

Let us repeat: it doesn't pay to take chances with tree sprays. Nothing is so important as to be sure about the effect, before you use them. Afterward, regrets won't save the crop.

Write us about your orchard, all about it. Tell us your troubles. Our orchard service is at your command.

General Chemical Company

Dept. C, San Francisco

PILLING Cattle Instruments

Easy to use

Best Made Last Longest

Your dealer's stock has probably been exhausted during the war while the Pilling Factory was working 100% per cent on Government contracts for surgical instruments for our troops in France. But before Spring we will be able to supply dealers who order early. To be sure of getting the genuine Pilling Instruments put in your order now.

FREE BOOK 48 pages, shows treatment for milk fever, bloat, garget, hard milkers, etc.

G. P. Pilling & Son Co. 2234 Arch St. Philadelphia, Pa.

Case No. 2 contains $3 milk fever outfit and 8 other "Easy to use" Cattle Instruments. $15 VALUE complete with "Easy to use" directions for $10 PREPAID.

$315.00 Beeman Garden Tractor

It Plows, Harrows, Cultivates and Drives a Pump

—SEND FOR CATALOG

H. V. Carter Motor Co. 730 Van Ness Ave. San Francisco

Turnips, sk. .....1.25@1.50

FRESH FRUITS

Apples—Bellefleur .....1.50@1.75
Newton Pippins .....1.25@1.65
Pearmain .....1.25@1.60
Lady Apples, bx. .....2.50@3.00
Avocados, doz. .....7.00@7.50
Bananas, lb. .....9@9½
Grapes, cr. .....1.50@2.00
Olives, lb. .....10@12½
Pears, Bartletts, wrapped bx. ..2.25@2.50
Beurre Hardy, lug 1.50
Kieffer, bx. .....2.25@2.50
Winter Nellis, lug. 1.50
Persimmons, bx. .....1.00@1.50

CITRUS

Lemons, bx. fy., 4.50@6.00; lemonettes, 3.00@4.00; grapefruit, 2.50@3.00; Limes; 2.00@2.25 per half box; Mandarins, 1.50@2.00; Navels, 4.50@7.00.

NUTS

The Almond Growers' Association has established opening prices as follows per pound:

Nonp. 27½
I.X.L. 25½
Ne Plus 24½
Drake 20

Outside dealers have named prices above these quotations and it is understood association stock is practically closed out and prices withdrawn.

Walnuts: Net prices have been named by the California Walnut Growers Association:

No. 1 Softshell 28
No. 2 Softshell 25
Jumbo 30
Fancy Budded 31½
Golden Gate Budded 29

Franquettes, Eurekas and other fancy varieties sold on sample. No. 1 Softshell guaranteed 88 per cent good; Fancy Budded, 90 per cent. In case of worms or damage by ants not more than five per cent.

RICE

Prices which rice millers of this state have voluntarily agreed with the food administration for California to pay to growers for paddy rice are as follows:

No. 1 and No. 2 Japan, in sacks, $4.32 per 100 pounds.

No. 3 and No. 4 Japan, in sacks, $4.16 per 100 pounds.

Prices for other grades will be paid for on a basic value proportionate, and no higher prices than those quoted above for any grades whatever will be paid.

The millers agree further to sell cleaned rice and by-products for prices not to exceed the following:

Fancy Japan, 1½c per pound.
Choice Japan, 7⅜c per pound.
Fancy second heads, 6⅞c per pound.
Screenings, 5⅝c per pound.
Brewers', 5¼c per pound.
Rice polish, $50 per ton, carlots.
Rice bran, $36 per ton, carlots.

BEANS

Jobbers' prices, cwt., recleaned:

Limas 11.00
Small Whites .....9.40@9.50
Large Whites .....8.00@8.25
Blackeyes .....5.90@6.00
Pinks .....6.75@6.90
Bayous .....7.25@7.50
Mex. Reds .....7.00@7.25
Cranberries .....8.25@8.50

HONEY

Jobbers' prices:

White extracted .....20@22
Light amber extracted .....17@20
Amber extracted 16
White comb, cs. .....4.50@6.00
Light amber comb, cs. .....3.50@4.00

Beeswax .....32@34

GRAIN

Wheat—Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per Bushel	Per Cental
No. 1	$2.20	$3.62 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	$2.18	$3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	$2.16	$3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 ½

For sacked grain add 9 cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.

Barley—Feed, 2.10@2.17½ per cental for choice spot; shipping, 2.20@2.25; milling, 2.25@2.30.

Oats—Red feed, 2.55@2.70 per cental; seed, do, 2.95@3.05, with recleaned at 3.15 @3.30; black, 2.55@2.65 for feed and 3.00 @3.15 for seed.

HAY

Under date of November 23, Scott, Magner & Miller says:

Receipts past week 731 tons. These receipts are very small indeed for this time of the year and under usual conditions would have a tendency to make a very strong market, but such is not the case as trade is extremely dull and arrivals have been large enough to supply all demands. During the week there have been quite general rains throughout the state which have been of great benefit to the green feed as well as to start crops that were already sown and to place other land in good shape for plowing. The purchase by the government of several thousand tons of hay in this market has been of considerable benefit to holders of hay in the interior districts.

The state bureau of weights and measures has indicated intention of going thoroughly into the matter of excessive quantities of dirt sold in baled hay. It is to be hoped that some laws will be passed covering this subject so that the blame of excessive quantities of dirt in hay will be placed where it belongs and farmers will be more careful in putting up their hay if they know that they will have to make reductions for the dirt therein.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.

Fancy Wheat Hay (light 5 wire bales) .....28.00@30.00
No. 1 Wheat or Wheat and Oat Hay .....26.00@28.00
No. 2 Wheat or Wheat and Oat Hay .....20.00@24.00
Choice Tame Oat Hay .....25.00@27.50
Other Tame Oat Hay .....20.00@23.00
Wild Oat Hay .....20.00@22.00
Barley Hay .....20.00@22.00
Alfalfa .....18.00@22.00
Stock Hay (in order) .....18.00@21.00
No. 1 Barley Straw, bale .....50@80

Damaged hay (all kinds), according to condition.

Citrus Fruit Market

Los Angeles, Cal., Nov. 26, 1918.

The last of the Valencias are bringing good prices, sales being made in New York on Monday as high as $11.65. The first car of new crop Navels was sold in New York, November 21 at $4.05-$5.40.

There is an enormous demand for lemons, Monday's sales on the New York market being the heaviest on California lemons in any market in the history of California citrus industry. Prices ranged on this market from $2.95 to $3.85. Other auction centers about the same.

Shipments

Shipments of citrus fruit from Southern California to date since November 1, 1918: Oranges, 32 carloads, lemons 512. To same date last season; oranges 1563, lemons 222. From Central California this season; oranges 565, lemons 103. To same date last season; oranges 162, lemons 25. From Northern California to date; oranges 22, last year same date, 3.

World Doings

Secretary McAdoo has resigned as secretary of the treasury and director general of the railroads of the United States. His successor, or successors, has not been announced. It is asserted by the Providence Journal that his resignation is in protest to the plan for retaining government ownership of the railroads.

A German correspondent to the Morning Post (London) writes from Kiel: "We are better off for food this year than in 1917. There is plenty of grain and potatoes; so there will be no shortage." The Post comments: "This only confirms the belief here that the conditions of scarcity advertised in Germany's daily whine about the armistice conditions do not exist. In this connection it is interesting to note the story of the finding of a great hoard of foodstuffs cached by his late Imperial Highness of Germany, told by a socialist, Wilhelm Carle, in the Frankfort Volks Stimme. The story is under the heading: "How Wilhelm Held Out."

APPLETON Sheller

Most efficient shelling principle

Coiled springs instead of ordinary flat springs give greater flexibility to the fingers that hold the ears up against the shelling discs. Smallest ears are held firmly until shelled *clean*. Largest ears go through without mashing or choking.

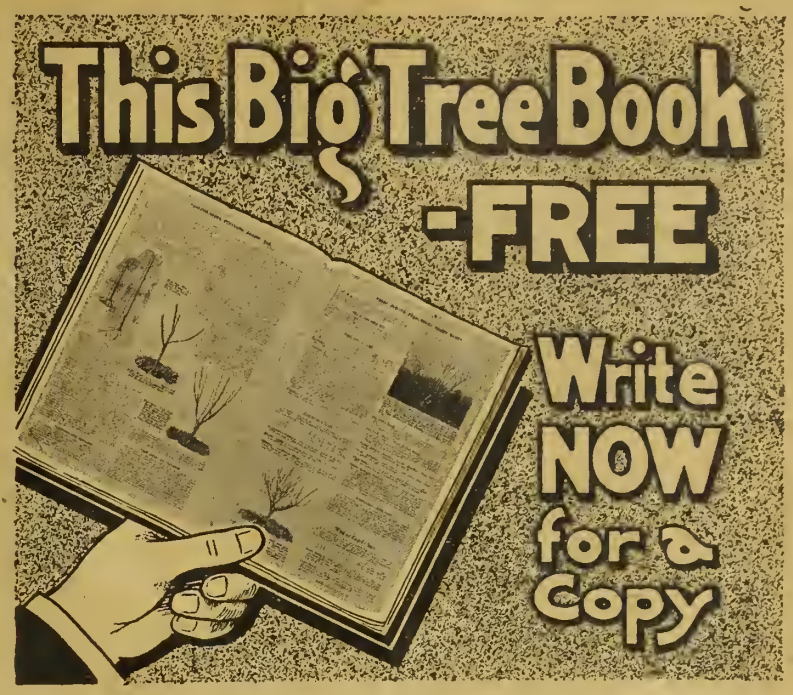
Cleaner Shelling and Cleaner Corn.

Shells clean wet or dry. No springs breaking in zero weather. The Appleton does not attempt the impossible, to fan out trash after it has passed through the screen, but prevents it from going through.

Free Booklet

describes three sizes, three styles, mounted on wheels or unmounted, with or without cob stacker, sacker, wagon elevator and extension feeder. You can't afford to put it off—write for it *today*.

H. C. SHAW CO.,
Dept. B, Stockton, Cal.



THIS practical planters' guide lists and describes the best proven varieties of all fruit-bearing trees, vines, ornamentals and roses.

It gives a lot of other information which, if followed, will keep you from making unnecessary and costly mistakes.

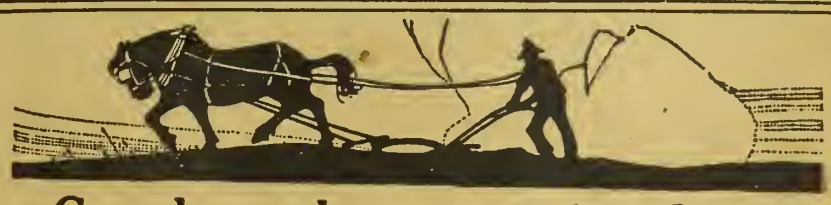
When you buy trees you want them to grow; you want them to bear; you want them true to name.

Fancher Creek trees are grown from selected buds and properly cared for. Trees are very vigorous and well rooted.

Fancher Creek Nurseries

204 Holland Building

Fresno, Calif.



Guard your harness against decay

When the natural oils in your harness dry out, decay sets in. Dust, sweat and moisture attack the leather fiber and cause rot. Eureka Harness Oil takes the place of the natural oil and preserves the leather. Keeps harness strong, flexible and jet black. No animal oil in "Eureka"; rats, mice and other rodents dislike it and won't gnaw harness dressed with

EUREKA HARNESS OIL

MADE BY STANDARD OIL COMPANY (CALIFORNIA)

Ornamentals and Fruit Trees

CALIFORNIA NURSERY COMPANY VERIFIED VARIETIES Niles, Cal.

Catalog Sent FREE

We are offering this season a magnificent stock of fruit and ornamental trees, climbing plants, shrubs, vines and roses.

We have the largest experimental orchard of verified and tried varieties of fruit trees true to name of any privately owned orchard in the country and it is from this reliable source that we secure our buds and thus can vouch for the pedigree of our trees.

Write to us about planting plans, giving list of varieties wanted. We will furnish you with an estimate of the cost, together with valuable suggestions.

California Nursery Co. Estab. 1865

P. O. BOX 406, NILES, CAL.

ESTABLISHED 1896
REX
KING OF SPRAY MATERIALS

"There is a REX for every orchard trouble."

REX SPRAYS

are the development of 20 years of Scientific Investigation and Development

Rex Lime and Sulphur Solution
THE MOST GENERALLY USED SPRAY.

Rex Arsenate of Lead
AN ARSENICAL POISON FOR KILLING LEAF EATING INSECTS, CODLIN MOTH, ETC.

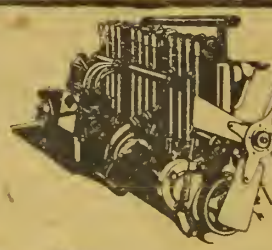
Rex Sul-Paste
A PRODUCT OF FINELY DIVIDED SULPHUR FOR THE CONTROL OF SCAB, MILDEW AND OTHER FUNGUS TROUBLES—ALSO RED SPIDER AND OTHER INSECTS.

Rex Bordeaux Oils Soaps

California Rex Spray Co.
BENICIA, CAL.

—"REX" SPRAYS — The Standard for 20 years

The Valve-in-head-type engine illustrated here, like all *internal combustion engines*, requires an oil that holds its lubricating qualities at cylinder heat, burns clean in the combustion chambers and goes out with exhaust. Zerolene fills these requirements perfectly, *because it is correctly refined from selected California asphalt-base crude.*



ZEROLENE
The Standard Oil for Motor Cars

It Keeps the Engine Young!

Zerolene keeps the engine young—full-powered, smooth-running, and economical in fuel and oil consumption—because it is correctly refined from selected California asphalt-base crude. Gives better lubrication with less carbon. Made in several consistencies. Get our Correct Lubrication Chart covering your car.

At dealers everywhere and Standard Oil Service Stations.

STANDARD OIL COMPANY
(California)

Our Fertilizer booklet will be sent on application. Our Agent is at your service.

Hauser Packing Company, Los Angeles, U.S.A.

Fertilize! *Fertilize!*

Hauser's Organic Fertilizers

Blood, Bone, Tankage

properly applied will increase your crop production. It's your patriotic duty to do this for bumper crops are necessary in OUR COUNTRY'S program of winning the WAR.

HAUSER'S ORGANIC FERTILIZERS are high-grade plant foods from the best organic sources. We have the right material and equipment to prepare Fertilizers to give the best results under California conditions.

Our Service Department will help you with your Fertilizer problems. Write for our booklet, FERTILIZER EFFICIENCY.

Hauser Packing Company
Los Angeles, U.S.A

We Manufacture Levelers for Any Power From 6 Horses to a 75 H. P. Tractor

A Schmeiser Leveler
of the "Giant" Type
WILL WORK WONDERS ON YOUR FARM

Moving immense amounts of dirt daily, and working on ground too tough for horses and Fresnos to tackle, SCHMEISER POWER LAND LEVELERS are now being used with utmost success by a great many ranchers, large and small—also by contractors—saving their owners time, labor and money.

WE SEND THEM ON THREE DAYS' TRIAL

So extremely simple, a child could operate one, as a simple twist of the wrist raises and lowers the bucket or holds it stationary, as the case may require.

YOU SHOULD
send for our LATEST catalog J-600 which is full of interesting information on LABOR SAVING DEVICES and machines for moving the earth.

Schmeiser Manufacturing Company
22 Mechanic St. Davis, Cal.

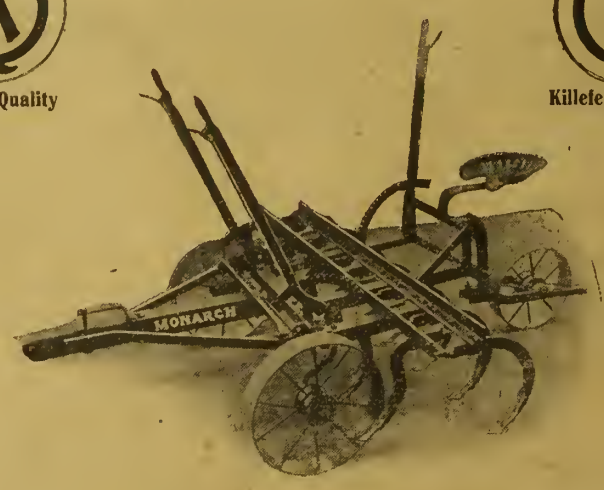
Manufacturers of

Sure Pop Almond Hullers and Separators, 3 sizes; McGarvin Fruit and Olive Graders, any size; Schandoney & Harrington Equalizing Hitches, any size; Diamond Special Harrows, Baker Clips, Clevises, and Schmeiser Portable Automatic Hay Derrick. We sell the Martin Ditcher and Grader.

Monarch Cultivator

Killefer Quality

Killefer Efficiency



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DEC 11 1918

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI. December 7, 1918 Nov. 23

Satsuma Orange Grove in Butte County

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877 Combined with California Cultivator 1914. Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916.

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OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

A grove of Satsuma oranges in Butte County is shown on this week's cover. In "Citrus in the Sacramento Valley" on Page 573 Mr. Hodgson recommends more extended planting of this variety in suitable sections. In the Cultivator of November 16 he gave particular attention to the Satsuma.

DRY LAND CROPS

There are large areas being farmed on dry lands which yield some profit in years of average rainfall but which show a loss in the dry years. Much, if not all, of this loss could be eliminated in the dry years and a better profit made in the good years if better methods and more careful farming were done, and this without materially increasing the expense. The plowing is almost always too shallow, the object being to get over the acres without regard to quality of work, cheap seed is sowed with a broadcast seeder and the crop left to whatever may happen.

In the beginning only as much land should be farmed as can be well done. The seed bed should be deep and well pulverized so it will hold moisture. The best plump seed should be sowed as it will have the vitality to withstand adverse conditions that may come before the plant is well established. The planting should be done with a drill to get all the seed at the proper depth to secure full germination and the use of all the moisture of the early rains or of light later rains. Sow as early as possible and do not use as much seed on dry land as on those that are naturally damp. It is much better to have one well filled head than several stems that do not head at all because all the moisture was used before the heads were made. If dashing rains come before the grain shows above ground go over it with a harrow having the teeth slanted well backwards, or with a roller. Harrow the field after every rain to prevent the formation of a crust and the loss of moisture which may be needed so badly later in the season. Keep up the harrowing every two weeks until the grain stalks begin to make joints.—J. B. N.

ONE IN TEN, AND OTHERS

Reading the daily press and magazines one catches the idea that every state in the Union is planning a vast program for taking care of the returned soldiers — and that each state hopes to attract the majority. The motive actuating the various states is to be commended but it strikes us that it might be well to inquire into the experience of other countries. Secretary Houston, in his address at the conference of agricultural editors, states that Canada has found that only about ten per cent of the returned soldiers need or want government assistance and that the other 90 per cent did not wish to be bothered.

The secretary raised the question as to whether or not it was fair to expect that the boys who came from farms would return to them. We think so. We also believe that most of those who gave up professional careers will begin where they left off. There is little doubt, however, but that a goodly number from other occupations will turn to agriculture, but we find little basis for expecting a general exodus to the land.

So it would seem that there is little justification for many of the vast schemes proposed, but rather that considerable energy should be directed along lines calculated to make agricultural operations in general more attractive and profitable.

A broad plan embracing better markets, better highways, and better rural schools would go far toward attracting to agriculture those of our soldiers who evidence a desire to farm, and would, at the same time, be a splendid and fitting recognition to those soldiers of the land who, though seriously handicapped through lack of labor, and without the consideration accorded most lines of industry, produced the grains and fats that won the war.

BACK TO THE FARMS

We recently commented on the appeal of a Fresno mother for the speedy return of the boys from France. All other mothers, and all of us, are still asking: "When will the boys come home?" The war is over, at least our hopes are strong it must be. "Will our boys come home tomorrow?"

The war department is answering this question by thousands of discharges already granted. The trains are filled with boys coming, and each day sees new orders which mean the return of more boys to the farm.

But there are many more who will not receive these discharges for months.

The close of the Civil War found somewhat more than 1,000,000 Union men under arms. Demobilization was not completed for 17 months.

The United States now has in France, England, Russia and Italy nearly two and a quarter millions. Almost as many more are in cantonments and training schools here in the United States. Shiploads of those in England are already on the way home, as are many Canadians and Australians. While most of the American boys have been in Europe but a few months, the boys of these other countries have been in the trenches four years. They may not be given precedence over American troops but certainly their needs must be considered and shipping handled accordingly.

Without wise arrangement — or even observing common humane procedure—the Germans have turned Allied prisoners loose to find their way home, if starvation and disease do not prevent. Austrian troops in wild scramble to get home from the Italian front have been brushed from sides and tops of cars to which they were clinging when they passed through tunnels. That American boys will be discharged as rapidly as possible is shown by every movement of the war department, but there will be no hysteria.

Thousands in American cantonments have already been given choice of the three R's — Resignation, Reserves or Regulars. The great majority are accepting the first and taking their discharge. One's doubts on this point are quickly dispelled by the effort to purchase sleeper berths.

The choice of Reserves gives privilege to the soldiers to finish training then return to private life with a possible 15 day field training yearly.

Then there is that other factor of effect of changing from occupations of war to those of peace, the effect on financial and economic conditions generally. Every angle is to be considered, is being considered, and we believe with greatest wisdom.

CALIFORNIA WINS AGAIN!

Just as we close our last forms a telegram from Chicago announces the winnings of the University of California at the great International Live Stock Exposition now being held at Chicago.

The senior yearling Shorthorn steer, California Marvel, was first in class and champion Shorthorn steer; a senior Angus calf was first in class and reserve champion Angus steer; the junior cross-bred calf, California Grizzly, was second in class. California also had the champion grade Shropshire wether; reserve champion pen of Poland-China barrows; first for best five steers, wethers and barrows. A total of five firsts, six seconds and special prizes was awarded the university.

California should be proud of the showing made by the animal husbandry department and the live stock interests of this state will be greatly benefited through the efforts of Professor True and his associates to demonstrate the possibilities of this state in the production of the best in live stock. More details will be given next week.

THE LIBERTY FAIR A FACT

After passing through the epidemic of influenza which necessitated repeated postponements of the opening date, The Liberty Fair became an established fact, Wednesday, December 4.

The Liberty Fair has suffered little on account of the delay—as a matter of fact, the management has taken advantage of the situation and many improvements have been made and the exhibits have been strengthened and made more complete.

The unusually strong show of live stock, particularly beef cattle and swine, is perhaps the outstanding feature. What is easily the best show of fat steers in carload lots that has ever been made in the state is in the pens at Exposition Park.

But no branch of agricultural activity has been overlooked, and the Liberty Fair which will continue to December 14 deserves the unstinted support of everyone.

It's a big show, a real show, a clean show and a beautiful show and represents in the strongest terms a lesson that can be taken home with profit by all fair visitors.

WINTER IRRIGATION

The evaporation of water from the soil is not nearly so rapid in the cooler weather but care must be taken that growing crops, such as alfalfa, the green manure crops and the orchards do not feel the need of moisture. Alfalfa will go through a dry winter without water but if there should be long continued dry weather water should be applied.

This will serve the double purpose of killing the gophers and of keeping the alfalfa in condition to begin growing with the first warm weather. We want tonnage when we plant green manure crops, and to get this must have the ground in the best possible condition for growth when the warm days come in winter, so must not neglect the water. Deciduous orchard trees do not need more than a damp soil until the buds begin to open, but citrus orchard soil should be kept moist at all times. If there is a check in growth at any time the fruit will never attain its normal size.

If water is cheap and plentiful the soil may be filled to a depth of five or six feet, but do not pour on water because it does not cost much. The soil is like a sponge which can be filled, but pouring on water after the soil is full only washes out the soluble fertilizer and does not add to the amount of water in the soil.—J. B. N.

CAR WINDOW NOTES

I note in Southern Indiana that all water tanks have in addition to the regular supporting frame an immense column or box-like additional support under center of tank. Finally it "soaked through" that this was simply the weather protection to pipes to prevent freezing and bursting. Why live in such a country when other side of Rockies lies California?

There's a boy poking brush and wood under a big iron kettle of steaming water. Nearby is an old time sled for platform against which leans a barrel, at 50 or 60 degree angle. I can not distinguish any butcher knives at this distance but assume a man will soon appear with them and the porker over the fence will be refused an armistice. He should have gone to California for there they don't put up, or down, so much winter pork. That's the penalty for staying in Ohio and making a hog of himself.

Little family cemetery on hill, four graves, each surrounded by moss-grown picket fence. Not a bad idea to have the long rest on the old farm where they use to get so tired working out the forest primeval and making food sun-up to sun-down.

Winding stream, maple trees, leaves drifting before late autumn breezes, up the opposite bank of the stream wild strawberries, with red and brown leaves, wishing the snow would come and cover them from the biting wind.

Nearing Eastern Ohio and Pennsylvania coal fields. Chimneys everywhere belching out black smoke. I've been more used to seeing a bunch of keen-eyed farmers about tractor or implement display or at farm bureau meeting Asking, then home and Doing those things which have made possible the winning of the war. The farmer's job has little of the spectacular. But he has stayed and worked in his drab setting, hardly taking time to observe the richer color of sunrise skies under which he has worked and without the thrill which comes from those myriads of smokestacks and pounding of triphammers which make the train tremble as we pass. Also without the thrill which comes from "Dollar an hour and double time for overtime."

Evening: Flame two or three feet high in farmer's yard lighting the front of home. "That's just the farmer's use of natural gas to light up his farm both day and night."

Pennsylvania: Stone houses, strongly built, immense stone or frame barns. Sometimes dairy cows in when winter comes and not out till spring. Stone houses, no projection of roof at gable end and practically no eaves. Brick houses, green blinds, white sashes and window frames. Not one such but thousands.

Maryland: Every house two story, some "ell with wing"; more only the stiff, upright two story box covered with steep "Gothic" roof. Oh, for a look at a homey, cozy California bungalow.

Wooded hills, oaks, maples, birches, scrub pines, elms. Lazy streams. Nature has done her part.

There is a great river, a city, a dome, a tall granite shaft—

Washington!

From War to Peace

By C. B. Messenger

WILL America change from a war to a peace basis with as little jar, with as little general disturbance to productive, manufacturing, financial and other conditions as she did from a peace to a war basis?

All are asking—none is wise enough to answer. Some are guessing one way, an equal number guessing the other way.

As editor of the Cultivator I have been discussing a little and listening more to other agricultural editors from nearly every state in the Union in conference with Secretary of Agriculture David F. Houston and others at Washington. And instead of using the editorial we and being formal, I'm going to write a commonplace letter to Cultivator folks.

I'll not answer the question asked above, but I'm going to be frank and say that if I were it would require three letters for my answer.

* * *

I left the coast of the Pacific Friday, November 15, and traveling continuously until Wednesday, November 20, I smelled the salt air of the Chesapeake, and on this trip I saw:

Orange and lemon trees of California loaded for another year while the fruits and field products of the past year are yet going to market in great quantities. I saw the ranges of Arizona, New Mexico and Texas covered with cattle, coal mines yielding thousands of tons of coal, wheat fields of Oklahoma, Kansas and Missouri green and the grain so high as to need pasturing off. I saw the yards of Packing Town in Kansas City filled with sleek cattle, the mills of St. Louis pouring out the black smoke in haste to complete contracts, cornfields of Illinois, Indiana and Ohio with thousands of acres of corn still unhusked and other acres which have been husked piled like heaps of gold over the field.

I saw in Southeastern Ohio amongst the hills of coal and iron every mill and shop running full handed. At Steubenville—a second Pittsburgh—the banks of the Ohio River were lined on both the Ohio and the West Virginia sides with great steel and iron mills filled with men "stripped to the waist and with sleeves rolled up." An hour later at Pittsburgh—I'll never forget the sight. It was dark. The glow from the furnaces and the many lights made the river like one of fire. But the word Pittsburgh means more to Cultivator readers than I can write, excepting that this is war-time Pittsburgh.

A night through Pennsylvania. Next morning while yet dark the mills and foundries of Harrisburg sent a glow through my sleeper window and gave an almost equal firelight effect to the Susquehanna.

Then in Washington I learned that all the great steel and munition plants are still filling contracts. Cannon are being cast today and great shells still are turned out by thousands while square miles of warehouses in France are filled with others, not one of which will ever be fired, for the war is over. Peace is not yet declared, but the war is over and for a thousand years. Therein is the compensation for the awfulness of this war.

The awfulness is not fully appreciated as far away as the Pacific Coast, not even here in Washington, though the intense activities here bring it nearer home. But today while in the dining room, Dean Hunt of U. C. came and sat down at my table. He is just back with an agricultural commission from shell torn fields. He has seen the boys brought in from the field and laid in rows on the floor while waiting for the operating table. He saw—but that is another story.

I said it is over for a thousand years, "then why the casting more guns?"

A war of magnitude calls for contracts of magnitude and I doubt not a war contract is as binding as any other. However, contracts not yet under way are being recalled. Those uncompleted are being filled and here is one reason—outside the binding nature of contracts—why it is done: Bread of many thousands is now depending on this class of work established by the war. Immediate termination of war work before adaptation of the mills and shops to other lines would force these people into pauperism or at least would cause great suffering.

The government policy plainly is to give all possible aid to all interests and maintain the present stable conditions. Because of the need for months to come of troops in France and Germany, also the limitations of transportation, it will be a year and perhaps two before all American troops will return. This gradual return will in addition prevent serious upsetting of labor conditions.

But about agriculture. There's the rub and therein is shown great interest by official Washington. Food, especially more meats, is the call. Europe's animal industry is greatly reduced. But on every hand, more even than in war, the farmer must produce more. He has produced more during the past two years with less help than ever before; he will continue—providing it pays.

The one dominant thought of the conference has been, stop "farming the farmer," stop advising, stop fixing and give a fighting chance, in fact a chance to make money, and the food supply will care for itself.

The great injustice of wheat grading rules called for a roast from every large wheat state. "The rules of the grain corporation have cost the farmers millions" was asserted and the "millers have made those millions" was almost as emphatically charged. The department has promised thorough investigation.

Other features needing attention and recommended are: A department of economics; the department of agriculture should cooperate with federal reserve banks (not the farm loan banks) in securing the handling of cattlemen's paper, or, more to be desired, aid rural credit cooperative effort by which farmers' short time paper can be handled; extension of greater educational opportunities through rural schools to boys and girls; increase of appropriation for provisions of Smith-Lever bill; improvement of farm community social conditions: don't push county farm agent work faster than thoroughly good agents can be secured; continue after war some features — especially those which may control profiteering and speculating in foods of the food control; not more crops but better prices; tenancy—and a thousand, or at least many, others. But as noted, "the second half of agriculture," economics, had large place in the discussions.

To come back to my first question: It is not answered. But there is a wonderful possibility confronting America and the wisdom which has in such large measure prevailed for the past four years appears to be available for the coming years. But honestly I never saw so many question marks in my life as have bobbed up in these two days' conferences.

Secretary Houston is a man of large vision and he has put the department on a higher plane than it has ever been on before. He confided as to changes which will give still greater efficiency.

Washington, D. C., Nov. 21.

* * *

Farm paper editors are peculiar things and in fact somewhat interesting. They often go to the farm bureau or a convention and from a back seat size up the farmer and his methods and pass on from such observations some hint to other farmers. It is good for one or rather several such observers, whose whole success depends on some others' doings and sayings having enough of value that they may pass them on as purely original gray matter, to gather themselves together for a bit of introspection.

Introspection however, was far from the real object of the gathering recently held with Secretary Houston in Washington. Notwithstanding, I believe every agricultural editor present realized the opportunity of the present moment and need of best endeavor.

It was a most informal gathering of men without organization, without definite plan, with only one inquiry—"how may we best serve?" Hence there was little time given to introspection or inspection of others; the immediate inquiry of the secretary of agriculture was as to how service may best be rendered at this moment.

There were editors representing more than half the states of the Union present. They were: H. N. Owen, Farm Stock and Home, Minneapolis, Minnesota; Carl Williams, Oklahoma Farmer-Stockman, Oklahoma City, Oklahoma; E. T. Meredith, Successful Farming, Des Moines, Iowa; E. E. Fraville, Western Farmer, Portland, Oergon; Ben F. Biliter, Indiana Farmers' Guide, Huntington, Indiana; S. R. McKelvie, The Nebraska Farmer, Lincoln, Nebraska; Edwin A. Smith, Washington Farmer, Spokane, Washington; Meade Ferguson, Southern Planter, Richmond, Virginia; C. B. Messenger, California Cultivator, Los Angeles, California; Charles Dillon, Capper Farm Papers, Topeka, Kansas; A. G. Kittell, Nebraska Farm Journal, Omaha, Nebraska; A. J. Anderson, Pennsylvania Farmer, Philadelphia, Pennsylvania; J. R. Waterbury, Michigan Farmer, Detroit, Michigan; John F. Cunningham, Ohio Farmer, Cleveland, Ohio; Fred W. Merrill, Kimball's Dairy Farmer, Waterloo, Iowa; John D. Douglas, The Maryland Farmer, Baltimore, Maryland; Paul C. Burchard, Hoard's Dairyman, Fort Atkinson, Wisconsin; H. Gaylord, Missouri and Kansas Farmer, Kansas City, Missouri; C. V. Gregory, Prairie Farmer, Chicago, Illinois; John J. Dillon, Rural New Yorker, New York, New York; DeWitt McMurray, The Semi-Weekly Farm News, Dallas, Texas; W. C. Deming, Wyoming Stockman-Farmer, Cheyenne, Wyoming; John Fields, Oklahoma Farmer, Oklahoma City, Oklahoma; Chester C. Davis, The Montana Farmer, Great Falls, Montana; Frederick L. Chapman, Better Farming, Chicago, Illinois; George Martin, Farm and Fireside, New York City, New York; Ben B. Lowhe, The Dakota Farmer, Aberdeen, South Dakota; E. S. Bayard, National Stockman and Farmer, Pittsburg, Pennsylvania.

Houston is a democrat — I mean democratic. We were all as one family gathered about his big mahogany desk in easy chairs, listening, interrupting, commenting, or questioning.

The secretary reviewed, in a few short moments, the war, America's entry, her wonderful record of preparation and of participation in its ending. America has done what she started to do.

Now, will America be as successful in changing from a war to a peace basis as she was in changing from a peace to a war basis? The secretary and all in the conference had but one answer.

In the fulfillment however, there is called for the best in thought and endeavor of every American. Hence official Washington wants the best from every one of the fifty million farm paper readers. The best from that fifty million will come with quicker and more enthusiastic response than from the other half or two-thirds of the country, many of whom do not know the true meaning of a Republic or Democracy. It is no time for force; it is a time for education and cooperation.

The first appeal to the American farmer is Food. The most dangerous man in the world is the man with an empty stomach, listening to the hunger cries of his own little ones. Eastern Europe is filled with hungry millions. Can those people be fed before anarchy takes entire possession? Europe must answer this question in large part, but the American farmer by his own fireside these long evenings has in his planning of coming crops a large part in the answer.

Must this answer be made by the farmer only from a humane or philanthropic standpoint? No, for while the humane appeal will be strong with every producer, economic conditions must be maintained in which the farmer's own family shall not go hungry. The farmer must be as exacting as to his bank balance as is any other business man.

The coming year's peace food program of the department of agriculture is in the making and within a few days will be given out. It will be no less strenuous than that of the last war year. The strong appeal will be along live stock or meat production lines. Live stock resources will be slowest of increase in the reconstruction of Europe.

The secretary believes that in most states of the Union rural tenancy is decreasing and ownership increasing. It is "unfortunate psychology" to call attention at this moment to the "small farm" idea.

Rural finance is one long question. The federal reserve banks have made it possible to finance this world war with less strain than events of far lesser magnitude have before put upon the country. Rural finance still needs correction. The federal farm loan is one long step. There must still be other institutions or methods which will enable the farmer, especially the live stock man, through personal credit to secure money on short time paper and, in part at least, on moral risk. No great industry is financed at such high costs as that of

Continued on Page 583

Agricultural News Notes of the Pacific Coast

Northern California

Rice growers are still sufferlng serious damage from wild ducks.

Green peas are being put on the market from the Hayward section.

The Suisun district shipped out a carload of tomatoes to Chicago last week.

Several express shipments of navels have been made from Lincoln, Shasta County.

No shipments of deciduous fruits are now being made East except of grapes.

A Colusa County farmer has just brought in a big bunch of feeders from Arizona.

Happy Valley, Shasta County, has had a big crop of olives this year and of fine quality.

The Tyler Island district of Sacramento County is making heavy shipments of celery to Eastern markets.

Butte County orange growers are still insisting that the eight to one maturity test for oranges is impracticable.

The property of the old Cloverdale Citrus Fair Association has been sold at public auction, bringing something over $4000.

The San Francisco Dalry Exchange now fixes prices on eggs but once a week, as it has been doing for some time with butter.

Inspection of the cattle ranges of the Tahoe national forest has been made by Supervlsor Bigelow and C. E. Rachford, grazing expert.

The Sonoma County farm bureau is taking up a good roads campaign. A committee has been appointed to thoroughly study conditions.

Prune growers in Tehama and Shasta Counties have been having considerable difficulty in getting their fruit dried owing to weather conditions.

The farm bureau at Live Oak, Sutter County, has asked the supervisors to pass an ordinance imposing a license of $2.00 on each dog in the county.

Oroville is now shipping its seven or eight carloads of oranges a day. The crop is only about one-fourth normal but those who have fruit expect good prices.

The annual meeting of the Nevada County farm bureau which was to have been held in November on account of influenza epidemic was postponed to some time in January.

O. W. Jarvis has been appointed farm adviser of Sacramento County to serve in place of Carl Williams, who has been granted two years' leave of absence on account of sickness.

The engineering department of the state is preparing to measure the snow fields of the Sierra this winter in order to gauge the water possibilities that may be counted on for irrigation.

Capay Valley's rice crop is practically harvested. The quality of the grain is good. It is believed that with the settling of the irrigation problem a much larger acreage will be planted in that district next year.

The Placer County farm bureau announces meetings for December as follows: Mt. Pleasant, December 9; Weimar, 11; Allen, 13; directors at Auburn, 14; Penryn, 16; Bowman, 18; Long Valley, 21; Gold Hill, 23; Mt. Vernon, 28.

Central California

Lindsay will ship over 2000 tons of olives.

There has been some damage to cotton during the recent rains.

A Lindsay olive grower reports sale of Sevillano olives at $450 a ton.

A second flood control district for Bear Creek in Merced County is now being agitated.

A short course in beekeeping is now being given at Visalia. Sessions will close December 14.

Stanislaus County farm bureau held its annual meeting and election Saturday, November 23.

Lindsay's shipment of oranges thls season has been far ahead of last year's to same date.

Woodlake, Tulare County, has shipped out a quantity of navels for the Thanksgiving market in New York.

Packing plants of the Prune and Apricot Growers' Association are now ready to receive second quality fruit.

Milk condensaries are now allowed their full normal requirements of sugar, and new condensaries may be opened.

Under the new sugar beet contracts now being circulated in the Visalia district a minimum-guarantee of $7.50 a ton is made.

Seventy-five thousand acres of wheat, lt is estimated, will be planted in the northern part of Tulare Lake Basin on the south side of the Kings River.

Warehouses and elevators in eastern Merced County report holding 23,500,000 pounds of barley in storage, having a value of $470,000, figuring on a basis of $2.00 per 100 pounds, the price belng paid for the few small lots sold.

The Stanislaus County farm bureau announces the following meetings for December: Denair, December 9; Mitchell, 10; Thalheim, 11; Tegner, 13; Wood Colony, 16; Hickman, 18; Fairview, 20; Orange Blossom, 21; Claus, 23; Ceres, 26; Patterson, 27.

The Monthly of the Kern County farm bureau publishes tentative dates for meetings of the local farm centers: Weed Patch, December 2; Kern Delta, 4; McFarland, 6; Delano, 9; Wasco, 11; Rio Bravo, 12; Edison-Fairfax, 13; Pond, 18; Rosedale, 20; Shafter, 23; Arvin, 27.

The government is taking all solid packed canned tomatoes and a large quantity of extra standards and those packed in puree from whole tomatoes, according to H. Clay Miner, purchasing agent for the food administration. All canned tomatoes packed with puree from tomato trimmings have been released for civilian use.

Vine pruning demonstrations will be held by Prof. F. Flossfeder in Fresno County at Biola and Kerman December 12; Reedley and Parlier, 13; Carruthers and Raisin, 16; Easton, Oleander and Kingsburg, 17; Temperance Colony and Clovis, 18; Del Rey and Sanger, 19, Fowler and Selma, 20; Bowles and Monmouth, 23.

Canned vegetables and dried fruits may be licensed for export to all countries except the United Kingdom. Italy, France and Belgium under an order just issued by the war trade board. Licenses will not be granted to the western Europe allied countries as the purchase for those countries is being made by the allied export commission.

Southern California

Redlands has begun shlpplng navels.

Victorville wants a fruit packing house and by-products plant.

The walnut house at Goleta, Santa Barbara County, has already sent out 40 carloads.

The Riverslde Heights Cltrus Association reports sales in the New York market of Valencias at $13.80.

It is proposed to establish a new cannery in West Riverslde. The cannery will handle largely vegetables.

The Hemet Orange Growers' Association shipped out several carloads of fruit for the Eastern Holiday trade.

The American Beet Sugar Company has a large force engaged in planting sugar beets on lts ranch near Arlington.

Lima bean growers of the district in Santa Barbara County between Carpinteria and Naples estimates a $600,000 crop.

Orange County Lima bean growers have received $350,000 from the Lima Bean Growers Association in first payment for beans delivered during October.

The Imperial Valley Long Staple Cotton Growers' Association has decided to open classes in the classing and valuing of cotton, for the benefit of the cotton growers who will meet every Tuesday afternoon.

The bean growers expect the coming of peace to open up an immediate market for their product both because of opening up European countries and allowing canners sufficient tin to handle a big pack.

Imperial County has resumed the holding of farm bureau meetings which were suspended by the lnfluenza quarantine. The regular schedule will be followed, with no attempt to "make up" lost meetings.

Horticultural Commissioner Sharp of Riverside County estimates the value of farm products of Hemet Valley at a million and a half. This does not include dairy products, honey, or miscellaneous small crops.

Olive growers of Fallbrook plan to keep their new olive factory busy, processing other products throughout the the year. So far the plant has handled tomatoes from 150 acres. It is now ready to work on olives.

H. J. Ryan, the new horticultural commissioner of Los Angeles County, assumed the duties of his office December 1. Mr. Ryan was formerly with the United States department of agriculture and stationed at Alhambra.

Bean packers throughout the country will be allowed to operate at normal capacity for three months, beginning November 1. The food administration announces that it is assured of sufficient tin plate to permit the packing of beans in normal quantities.

Inspection of cattle shipped from Riverside County points began on November 25, according to the announcement madc by the cattle protective board, which has appointed the following men inspectors: Emmet Singletary for Riverside, Highgrove, Arlington, Corona, Perris and adjacent territory; J. O. Freeman, of Temecula, for Elsinore and Temecula; Albert Pico for the San Jacinto country; Ben Barton de Crevecour for Banning.

The Coast and General

Florlda is now shlpping out about 600 carloads of oranges and 400 carloads of grapes per week.

Florida is now making large shipments of winter truck crops, beans at present belng the heaviest shlppers.

The Colorado State Potato Growers' Associatlon will hold its annual meeting at Fort Collins, December 10 to 12.

In the Salt River Valley, Arizona, the long staple cotton crop grown this year on 75,000 acres is estimated at approximately 35,000 bales.

The Fruit Growers Conference will be held at Spokane, Washington, December 10-13. Federal box apple grades will be the main subect of discussion.

The $10 a day trackage charge on perishable shipments, which went into effect November 1, has been temporarily set aside by the railroad administration.

The port of Santa Rosalia in Lower California is developing into a good market for rice, beans and other California food supplies. It is a large mining center.

Since 1916, largely by the use of tractors, Great Britaln has plowed up 2,400,000 acres of grass land. Most of this tremendous acreage has been sowed to wheat.

Prof. David Ernest Lantz, assistant biologist, United States bureau of biological survey, died of pneumonia at hls home in Washlngton, D. C., on October 7, 1918. His most actlve and beneficial work had to do with the suppression of rodent pests.

The 1918 sugar crop of Hawaii totaled 561,000 tons, as compared with 636,000 tons in 1917. Practically all of the output has already been shipped to continental United States. The grinding season for the 1919 crop, estimated at 600,000 tons, has commenced.

The grocery bulletin board, showing prices which the grocer pays for his goods and prices which he asks from the purchaser, has made a hit with the grocer as well as with the public. The food administration announces many letters of thanks for the idea as clearing up many misapprehensions.

California dried fruits have become very popular in England since the war shut off supplies of Turkish frult, and it is believed that when the direct steamship line between Bristol and Pacific Coast ports, using the Panama Canal, is again restored to its pre-war basis, this trade will meet with a very satisfactory increase.

The sawmill operators throughout Jackson County, Oregon, who have been hampered all season with a labor shortage, have nearly all signified their intention of operating all winter, hoping to secure additional crews from the northern California and Klamath County camps, which will suspend shortly for the winter.

The salmon pack on the Pacific Coast of the United States for the season has been estimated at 8,300,000 cases. British Columbia will probably produce 1,000,000 cases, bringing the total up to 9,300,000 cases, as compared with 10,124,894 in 1917. The government has commandeered 60 per cent of the Chum, 65 per cent of the Pink, 80 per cent of the Alaska-Red, and 100 per cent of the Sockeye varieties.

Citrus in the Sacramento Valley

By Robert W. Hodgson

TO THE average Southern California citrus orchardist it is a matter of considerable astonishment to learn that commercial citrus culture is being engaged in 500 miles north of Los Angeles in the Sacramento Valley. Indeed to call it astonishment is putting it rather mildly, many expressing an incredulity that is dangerously near disbelief. And yet it is a fact that there are orange orchards in California in the same latitude with New York City and Lincoln, Nebraska. This is, of course, made possible by the peculiar topography of California, whereby so far as temperature is concerned a few feet in elevation is of much more consequence than several hundred miles in a north or south direction. The great inland valley formed by the basins of the Sacramento and San Joaquin is very effectively protected from eastern storms by the Sierra Nevada and from cool ocean breezes by the Coast Range, with the exception of the San Francisco Bay region, which serves as a draw to this huge valley. The valley floor is, generally speaking, subject to frost, but at an elevation of from 500 to 1500 feet along both sides of the valley lies a thermal belt where on account of adequate air drainage frosts seldom occur. It is in this belt that the citrus orchards in question are located, and there is much good land comparatively free from frosts still available for the growing of citrus fruits. Moreover, although it is recognized that there are certain drawbacks incident to raising citrus fruits in this part of the state, some of our best citrus men feel that the advantages more than offset the disadvantages and that the future expansion of the citrus industry in California will largely take place in the thermal belts of the Sacramento Valley.

A Profitable Orchard In the Oroville Section

Orange trees were first planted in Northern California in the early sixties. The first planting of which we have any record was at Bidwell Bar in Butte County in 1859, and the famous Bidwell Bar tree is still standing, healthy and thrifty and bearing large crops every year. In a great many cases these early plantings proved successful, and it was soon apparent that areas of greater or less extent, suitable for the growth of citrus fruits, existed in many parts of the Sacramento Valley from Fair Oaks in the South to Red Bluff in the north.

One of the early commercial developments occurred in Butte County in the Oroville section, where several thousand acres were set out to oranges at Palermo and Thermalito in the eighties. At about the same time plantings were made in the neighborhood of Orland and Corning and somewhat later in the vicinity of Fair Oaks in Sacramento County. During the eighties and early nineties great enthusiasm was manifested over the possibilities for citrus culture in Northern California, the newspapers and agricultural journals of that period devoting considerable space to the subject. A number of very successful citrus fairs were held, which custom was revived some four or five years ago in the annual orange show held at Oroville.

But in the frenzy of early planting many serious mistakes were made, mistakes that took years to become evident. Almost anything that belonged to the genus citrus was planted in the expectation that it would prove profitable. As a result practically everything in the way of citrus was to be found in the orchards a few years later, including a liberal sprinkling of the Australian Navel. Seedling varieties included the Parson Brown, Jaffa, Joppa, St. Michael, Ruby Blood, Mediterranean Sweet, and various Japanese sorts. The trees grew very well indeed and fruited heavily, but the fruit could not be disposed of profitably on account of inadequate selling facilities.

The "hard times" of the nineties hit the young industry just as they affected citrus growing in the south. Many of the orchards were abandoned. Some, however, were kept alive although carried at a loss. After the organization of the exchange and the stabilization of marketing conditions, it became evident that the navel variety was the only profitable orange for Northern California, and with this realization dates the beginning of profitable orange growing in the Sacramento Valley. The success of the few navel orchards which had come through the hard times in good physical condition and of those which had been early worked over to this variety, has in recent years stimulated more extensive planting, and at the present time there is quite a respectable acreage of young navel orchards scattered through the valleys. Among the largest developments are those of the Mills Orchard Company of approximately 800 acres near Maxwell and some thousand acres at Hamilton City. At the former place much of the planting consists of lemons, which are now just coming into bearing.

The advantages of the Sacramento Valley as a citrus growing section may be summed up in cheap land, abundance of cheap water, absence of scale and insect pests and high quality and earliness in maturity of the fruit. The main disadvantage at present lies in the relatively light yields occasioned by the June drop. Recent investigations have indicated the possibility of overcoming this drawback, however.

The Sacramento Valley agriculturally speaking is a relatively new country. Less development has taken place in this part of the state than in practically any other important agricultural area. Moreover, climate has not yet been capitalized in the Sacramento Valley. The result is that good agricultural land in many parts of the valley is still comparatively cheap.

The most important limiting factor to the extension of the citrus industry in Southern California is the scarcity of irrigation water. Development has already reached the point in many southern sections where at the present time the cost of water is as high as can be paid and still a profit made. This means that water for irrigating citrus orchards is much too expensive for alfalfa growing, dairying or stock raising where the annual returns per acre cannot begin to approximate those received from a good orange or lemon grove. And yet diversified farming where animals are kept is the only kind of agriculture tending toward maintenance of the fertility of the land.

Citrus orchards must be fertilized. Young groves can be cover cropped. This cannot be done with many of the older groves where the trees crowd. When manure can hardly be had for love or money, which is virtually the condition at the present time, and cover crops cannot be grown on account of the size of the trees, and water and land are too expensive to grow alfalfa either to haul on to the orchards as fertilizer or feed to dairy cows, what can one do? Here is a problem facing the citrus grower in Southern California and as yet no thoroughly satisfactory solution is in sight.

This situation will never face the Sacramento Valley citrus grower. Water is so plentiful that it will always be cheap. And it is cheap enough to use for diversified agriculture, which provides an adequate means for the maintenance of the fertility of the soil. Most of the newer Sacramento Valley citrus plantings constitute but a side line in a larger diversified agricultural development. The Maxwell division of the Mills Orchard Company, in addition to a thousand acre citrus planting when complete, is in the business of raising alfalfa and hogs on an extensive scale. A large flock of sheep is also maintained. This system of farming in which citrus growing is but one of a line of industries is made possible only by cheap land and an abundance of water. And it provides indefinitely for the maintenance of soil fertility. Moreover, abundance of water makes possible intensive intercropping of the younger orchards which furnishes a considerable revenue to the grower before his trees reach bearing age.

Much of the freedom from scale and insect pests in Sacramento Valley citrus orchards is simply due to the fact that they have not been introduced as yet. Climatic conditions, however, are so hot and dry during a great part of the year that many pests, even if introduced, would hardly be of serious consequence. The black scale has been introduced a number of times, but is rarely found to spread to any degree, nor does it become serious. The yellow and soft brown scales may be found occasionally but are not considered as doing much damage. The gray scale seems likely to be the most serious scale pest, if it once becomes widespread, since this scale seems to stand the interior valley conditions much better than the others.

The only disease of any importance is the new citrus blast which has spread widely during the last two or three years. Fortunately it only works during certain favorable combinations of growth and weather conditions which ordinarily do not occur oftener than once in three or four years.

Mottled leaf is practically unknown in Sacramento Valley orange orchards, the color of the foliage usually being exceptionally dark and green, indicating a very healthy condition.

On account of the high summation of heat units during the long growing season the fruit is of a markedly superior quality and matures much earlier than is the case south of the Tehachepi. It is not uncommon for the fruit to test up as early as the latter part of October, the Oroville section vying with the Lindsay-Porterville district in getting the first car of oranges to the Eastern market. This is a decided advantage as early navels usually command very satisfactory prices.

Navel Oranges Interset with Apricots
Notice the intercropping with sweet sorghum.

To one who is familiar with the citrus industry in Southern and Central California, it seems strange to find the Valencia not grown to any extent in the Sacramento Valley. This variety has proven itself considerably more heat resistant than the navel in the San Joaquin Valley. In many sections Northern California seedling oranges come through the winter without frost injury. In these sections it would seem that on account of its heavier yields and summer prices the Valencia would be more profitable than the navel. At least its trial would seem worth while.

There is a vast acreage in the Sacramento Valley just below the foothill thermal belt where the Satsuma orange would grow to perfection Why this variety has not been more extensively planted is a mystery to the writer.

Walnuts

Written for California Cultivator By J. B. Neff

THE present season has been, or at least should have been, the most successful season for the walnut growers of the state. Prices have been the highest known and while not relatively as high as some other products should have been very profitable where proper care had been given the orchards. It is also very probale that prices will be good for several years and that they will always be higher than those which ruled five to ten years ago. It is also likely the expense of growing walnuts will be more than in years gone by, so the walnut grower who is a good business man will be considering better methods by which he can increase production and quality without unreasonably increasing the cost.

The time of year has arrived when the pruning of walnut trees for the next year should be done, as it is always best to do the heavy pruning while the trees are dormant, and thorough pruning will do as much toward increase of production and quality as any other one thing. In fact, good cultivation and plenty of water may be given but without the necessary pruning the walnuts may be small and the crop light.

It should be borne in mind that a very small apparent increase of size of walnuts makes a large increase in the total crop and that the large walnuts command a higher price than those that are small, hence anything that will increase the size materially increases the net proceeds. Also do not forget that walnuts which are one and one-eighth inch in diameter are almost one and one-half times as large in bulk and weight as those measuring one inch in diameter. Likewise a walnut measuring one and one-quarter inch in diameter is nearly twice the size of the one-inch walnut These increases of size can be produced by careful management, in pruning, fertilization, cultivation and irrigation.

(Next week Mr. Neff will give an article on Walnut Pruning with illustration showing properly pruned tree. —Edit.)

Soil Improvement

Written for California Cultivator By H. Culbertson

MUCH attention has been given to citrus orchard soils. Only a small part of the tillable area, however, is adapted to citrus culture. Either the extreme temperatures are not good or the lack of irrigation compels large areas to be used for other crops. The grain and hay areas are in great need of soil improvement. As a rule the leguminous cover crops are not a success on such soils. They have been so depleted of all vegetable matter that they will not grow. There is no irrigation available to start them early; to depend on rainfall, even if they would grow, makes them too late to plow under before the soil is too dry in the spring. Stable manure is out of the question except for very small areas. It is becoming apparent that barley as a cover crop is about the best on the list of plants that may be used. It will start with the first rains, grow in cooler weather and grow more tonnage to the acre on the soils under consideration. The writer tried the experiment first about eight years ago as follows: Sowed barley for two years in succession. The second crop would have easily made two tons of dry hay to the acre. The following winter being a wet one it grew an immense crop of burr clover two feet high. These crops were all plowed under at maturity. Since that time that ground has been producing satisfactory crops of sweet potatoes, melons and tomatoes.

The practice of seeding land to barley early that is to lie summer fallowed and then plowing it under as late as it is safe makes a gradual improvement in soil conditions.

It should be borne in mind that the great soil difficulty is its physical condition fully as much as a lack of available plant food. Soil with a good supply of vegetable matter remains in a granular condition.

Soils in need of the above treatment break down into a fine paste with heavy rains, run together into a compact mass that dies out quickly, getting as hard as a traveled road. Soils in good condition are more or less open, permitting some air circulation that is very essential to good crops. In the above turning under of a crop of barley, the actual amount of vegetable matter turned under is small compared to a good application of stable manure. Yet it furnishes material for the soil bacteria to live and increase in number. They in turn do the work of improving soil conditions.

A soil with plenty of bacteria will not be unproductive. The farmer must supply them with food to get results. A few years ago the writer sent two samples of soil to the state university. They were both from the same field and had been in grain for 40 years at least, and no return made to the soil. One of the samples was taken from a locality where the hay crop was about 200 or 300 pounds per acre. That was tested for bacterial content by filtering through it a solution containing nitrogen. The result was practically no change in the contents of the solution. Had it been a good soil for crop production the nitrogen in the solution would have been changed to the nitrate form. This is a very necessary thing and the work is done in the soil by a class of bacteria. That particular locality had become so short of vegetable matter in the soil that these essential organisms were practically all dead. Good soils have many millions of them in every cubic inch. If we feed them with plenty of vegetable matter they will produce the soil conditions necessary for good crops.

RIPE OLIVE RULING

THE present ruling by the bureau of chemistry says nothing about the color of the olives when harvested, but confines its definition of "ripe" olives to a consideration of the oil content in the flesh of the olive. Here is the ruling

"The bureau has received numerous

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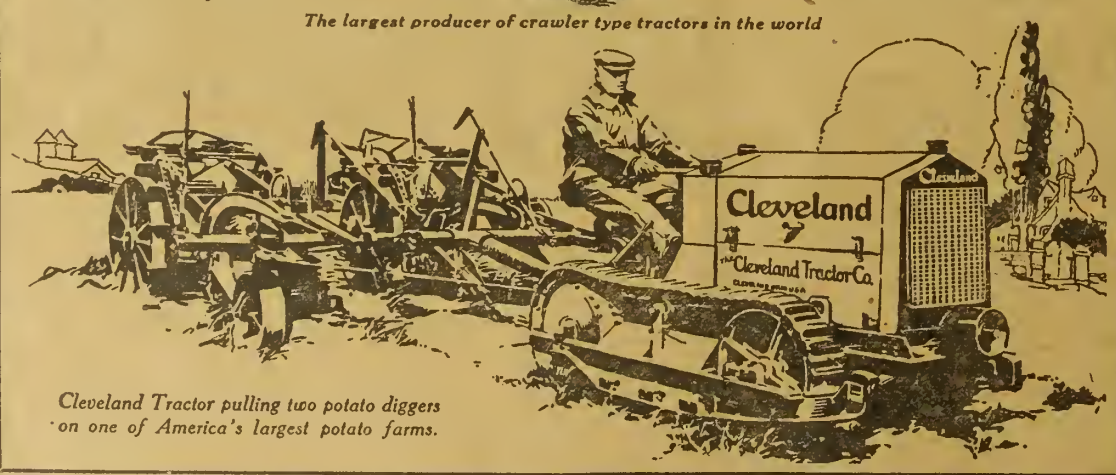

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complaints that certain olive packers were packing immature, unripe olives under a labeling which would indicate that the product was a mature, ripe olive, and that these packers so manipulated these immature olives during the process of packing as to give them the characteristic appearance of a ripe olive when packed. Such immature olives, mislabeled as ripe olives, would be regarded as in violation of the federal food and drugs act if brought under the jurisdiction of the act. An extensive investigation of the changes that occur in the composition of olives during ripening has been made. The results obtained indicate that the index for maturity for olives is the oil content of the flesh.

"As a tentative standard of maturity for Mission olives and other common varieties except Manzanillo, Ascolano, and Sevillano, an oil content of 17 per cent in the flesh is regarded as a minimum. The Manzanillo olive should contain a minimum of 15 per cent of oil in the flesh to be regarded as ripe or mature. Olives containing less than the percentage of oil in the flesh specified above would not be regarded as ripe or mature, and, when brought within the jurisdiction of the food and drugs act, would be regarded as in violation thereof. For the large fruited varieties, such as Ascolano and Sevillano, no standard of maturity is proposed, since these varieties are, of necessity, gathered when immature. Such olives can not properly be designated as 'Ripe.'

"These minima for the oil content of ripe olives are to be regarded as tentative. The bureau will welcome such suggestions and representations in regard to them as the trade may desire to make. Should it be determined at a later date that the minima above given should be changed in any way, due notice will be issued by means of a service and regulatory announcement.

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ORNAMENTAL GARDEN CALENDAR FOR DECEMBER IN NORTHERN CALIFORNIA

Written for California Cultivator
By Albert R. Gould

THE fallen leaves may either be stacked up in a big heap to form valuable leaf soil or they may be dug in the ground to form humus. Complete the work of clearing the perennial border, and where possible many of the larger roots may be divided and replanted, such as in the case of the Shasta daisy, Michaelmas daisy, tritoma, chrysanthemum, etc. During the wet weather there will be an opportunity to clean the seeds which were collected from favorite subjects.

Dahlias

These are frequently left in the ground through the winter, and they very often come through "smiling" again early the next season. However, wherever it is possible to dig them, providing they can be stored away in a dry place, it is advisable to do so, as they can then be taken care of and the larger roots divided for planting the next season. Furthermore, the plot can be well manured and cultivated for future use. See that the choice varieties are kept labeled.

Bulbs

In this department for October we gave cultural hints, and those who desire to secure choice varieties would do well to order at once from their seedsman, whose bulb catalogue is now obtainable. With regard to the selection some prefer one shade of tulip, some another, but as there is such a wide range, especially among the long stemmed or Darwin types, there will be no difficulty and one can secure his favorite. Of course those of more recent introduction are higher in price, but they are really choice. Among them we might mention Bronze Queen and Inglescombe Yellow. Others worthy of a place in the garden are Harry Veitch, Clara Butt and Pride of Harlem.

The daffodills or narcissus are also very popular, flowering as they do very early, especially the Polyanthus and Poeticus types.

Among the hyacinths are to be found some perfect flowers with their waxy form and fragrance. They may be had large or small from the early white Roman and Dutch types to the very large named varieties in solid colors rich and beautiful.

The iris family is a very large one and comprises many different types, some having roots formed by rhizomes or underground stems enlarged, and others having bulbs. Among the latter are the Spanish, Peacock and English, and some beautiful colors are to be secured. The Spanish flower somewhat earlier than the English. For planting near the water the Japanese iris are ideal, and for shady places the large flag types are excellent.

Freesias are very early flowering bulbs and most fragrant, in colors white and yellow and there are also some hybrids recently developed.

And last but not least we have the brodiea and calochortus, both very interesting wild flowers which well repay cultivation.

Hedges

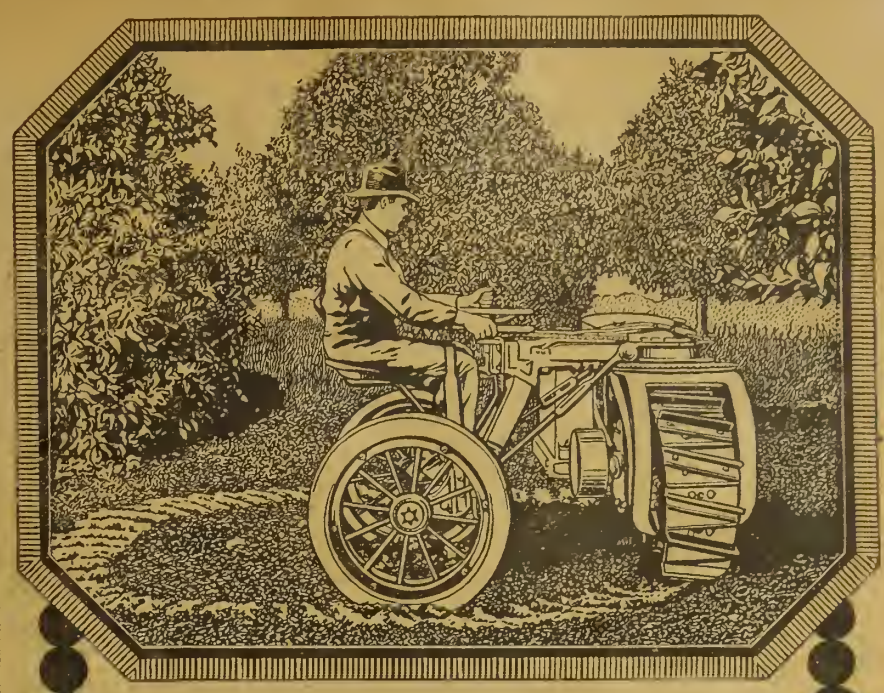
This month work on the hedges will be in order whether it be cutting, planting or spraying, and as the scale insect is just now prevalent on the pittosporum and wild cherry it will be desirable to spray with a kerosene soap mixture or a solution of nicotine and soap. The Monterey cypress hedge should also be sprayed several times a year.

Spring Flowers

These are looked forward to with joy after the dull winter, and it will be necessary to see that well established plants of Arabis, forget-me-not, alyssum, saxatile, aubretia, violas, wallflowers and pansies are planted out without delay, and it will not be too early to plant the foxglove or digitalis. A group of this under the trees will be a sight to behold, and the hollyhock may be used to the same effect.

Foliage Effects

Just now the foliage effect of spiraea prunifolia flowering shrub is wonderful and the ampelopsis or Virginia creeper is a picture also.



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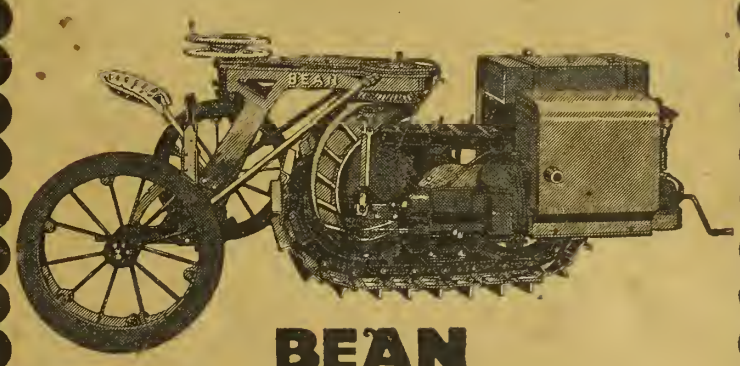

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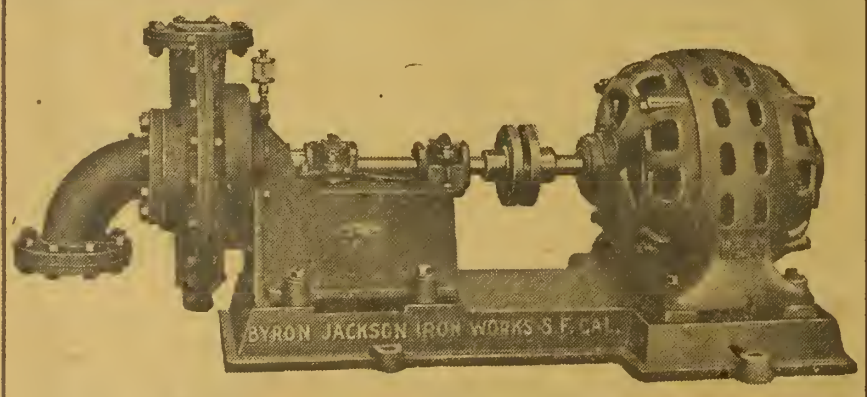

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The Vegetable Garden for December

Northern California

Written for California Cultivator By Albert R. Gould

CONDITIONS on the whole this season have been very favorable for vegetable culture. The early rains, although not heavy, helped out and encouraged an early start, and up to the time of writing the absence of any severe frosts have enabled us to have late corn and tomatoes and also green peas, and had we taken a chance we could have enjoyed string beans rather late. Throughout last month we pulled several hundred cobs of Golden Bantam corn, sown late of course, and picked a quantity of Little Marvel and Laxton peas. We planted the rows of these about three feet apart and two weeks ago made another sowing in between. These are now well up and after picking over the earlier crop once more these will be removed, leaving the last sown to occupy the plot for an early supply. We should like to mention that these are planted on a warm slope practically due south. Green and black aphis have been in evidence during the past month, but should we get hard rains, which is probable during the next few months, they will lose their hold. Weather conditions may prevent much outside work this month, but every opportunity should be taken to have as much land as possible prepared for use the coming season.

Although peace is at hand the need for food production is as great as ever. Europe is just now a hungry place and California will be called upon to still supply a large share. It is necessary, however, for one and all to carefully consider just how much they can cultivate, as it is never wise to try to handle too much. Make your plans according to the time you can devote to the work and measure your plot accordingly. It takes time to plant and more time to keep a garden watered and cultivated after it is once planted, and it will stand no neglect. Wherever possible, use the plow; it will save much time and labor in preparation, and don't be afraid to plow in the manure if you want results. Plants must be fed or they will not feed you. Study soil needs.

Peas

Lose no time now in sowing the first of the main crop varieties such as Stratagem, Senator and others mentioned last month, and select the warmest and most sheltered spot in the garden if you wish to have early peas. Successional sowings of Little Marvel and Alaska, the extra early varieties, may also be made. Frequent cultivation should be given those sown early which are now well through the ground.

Lettuce

Where severe frosts are experienced and the plants are heading in well a covering with straw will protect these and hold them for winter use. The Romaine or White Paris Cos, if forming heads, should be tied in to blanch the center, which is thus made white and crisp.

Tomatoes

As we predicted in these columns the early rains prolonged the season. All late fruits should now be collected and taken into the house to ripen; the vines should be cleared off and the plots prepared for another crop. See that no diseased fruits are left on the plot. As this crop robs the soil of considerable plant food the soil should be liberally manured.

Onions

Those who availed themselves of the rains would no doubt by now have sown the early varieties of this crop. Towards the end of this month the main crop varieties may be sown, and for general use we recommend Ailsa Craig, Morse Brown Globe, Prizetaker and Australian Brown. If a white onion is required sow White Portugal. Have this plot richly manured as onions are gross feeders. Sow the seed in rows 15 inches apart. Onion sets or small onion bulbs may also be secured now and planted in rows.

Rhubarb

Strong roots of this excellent crop may still be planted as per directions given last month for general culture.

Raspberries

New "canes" or plants may be secured from your nurseryman and planted this month in rows at least three to four feet apart in richly manured soil. Good varieties are Superlative, Cuthbert and St. Regis, the last named being of very recent introduction. A good golden yellow is Four Seasons.

Strawberries

Complete the planting of these and keep the ground well cultivated between the rows of the more established plants set earlier in the season.

Storage Crops and Seeds

Continue to place any surplus root crops in storage and remove any decayed. Look over your stock of seeds and carefully list your requirements for the coming season. It will soon be time to order.

Southern California

Written for California Cultivator By D. F. Reichard

DECEMBER is what we might call a preparation month. As a planting month the weather in general is too cool for proper germination and growth of young seedlings so that it is a good plan to be getting the ground in shape for planting seeds next month.

Fix up or build a hot bed or cold frame for starting the more tender plants such as tomatoes, peppers, egg plant. For early plants the seed of these should be planted during this month as they require about two months to get strong enough to set outside.

A hot bed is made by digging a pit about two feet deep and four feet wide and as long as necessary. Fill in a foot or 18 inches with fresh manure and straw, which cover with about eight inches of well prepared light loam soil. Build a solid board frame around the bed, giving it a south exposure by having front or south side a foot high and the back 18 to 24 inches high. Cover with glass or muslin which raise during the heat of the day to permit free circulation of air. Be sure to put the top down early enough in the afternoon to allow the bed to warm up for the night. One to two hours of sun will do it. A cold frame is built the same as a hot bed without the manure for heat.

If not already done have your ground thoroughly worked up ten or more inches deep and well pulverized. If this is done have it deeply cultivated after each rain storm until planting time. This keeps the land clean and puts it in fine shape as well as helping it to hold the moisture.

For those who have ground in warm sections or with warm exposures plantings of the hardier vegetable seeds and plants are quite in order. Under these conditions, Early Egyptian beets, carrots, endive, kohl rabi, Swiss chard, New York or Los Angeles Market lettuce, early radish, early peas, Giant Amsterdam spinach, collards, kale, mustard, cabbage and cauliflower can be planted.

Prepare beds for the plauting of hardy and dormant plants. It is a good plan to get them established now for early growth. Set out Giant Crimson Winter rhubarb, Bohemian horse radish, asparagus roots, strawberry and artichoke plants, also kale, cabbage and cauliflower plants.

Arrange your ground so as to allow for planting what permanent small fruit bushes nd trees you want for the house orchard. January and Febru-

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ary are the best months for setting out deciduous trees and plants.

Do not fail to prune the unnecessary wood from all trees and shrubs about the place and dispose of all litter that will harbor insects or disease.

THE SOY BEAN

Written for California Cultivator
By T. J. Walker

THE growing of the Soy bean in California has not been carried on to the extent that its merits, as an agricultural plant would justify. The growing of the plant in the San Fernando Valley in a small way for the past three years has convinced me of its wonderful possibilities as a money maker, in the use of the plant as a forage crop or as an article of human food.

Getting a good stand has been one of the greatest obstacles to success, due to poorly prepared seed bed or planting too deep. It is a crop that requires better treatment of the soil than the average farmer is in the habit of giving to his farm crops.

The soil should be well pulverized, with plenty of moisture, and of a warm temperature conducive to quick germination. Do not be tempted to plant by a few warm days in March or even before April 15 unless you have a warm sandy loam soil.

The seed should be planted from one to one and one-half inches deep. Artificial inoculation of the seed should be resorted to. This is very important, as my experiments show that the crop shows an increase of from 30 to 40 per cent from inoculated fields over those not inoculated.

Out of 14 varieties experimented with I have discarded all but three. They are medium yelow in color and medium in size. These varieties are preferred for food and the production of oil and meal. The mammoth all show low percentages in germination. The black and brown seeded varieties are most suitable for forage. The yield of seed to the acre varies from 750 to 1400 pounds to the acre.

The hay is relished by stock of all kinds and is palatable and nutritious as alfalfa.

In growing the seed plant in rows 30 to 36 inches apart so that the plants will not lap in the row. Have a plant every eight to ten inches in row. They can be planted and harvested the same as beans. It is well, however, in harvesting to make the piles larger, for the reason that they shatter more than the ordinary bean. Especially during such weather as prevailed during the harvesting weather this fall, i. e., rain, fogs and then extreme dry weather. Plant about twenty pounds to the acre.

Time for seed to come to maturity is from 95 to 110 days. They should be allowed to grow until they lose about one-third of their leaves. If cut for hay then harvest in about 90 days. The tonnage of cured hay at this time will run from 3000 to 5000 pounds to the acre.

No insects or pests of any kind have bothered the plants during my three years' experiment, although Lima beans next to them this year were badly affected by the corn worm.

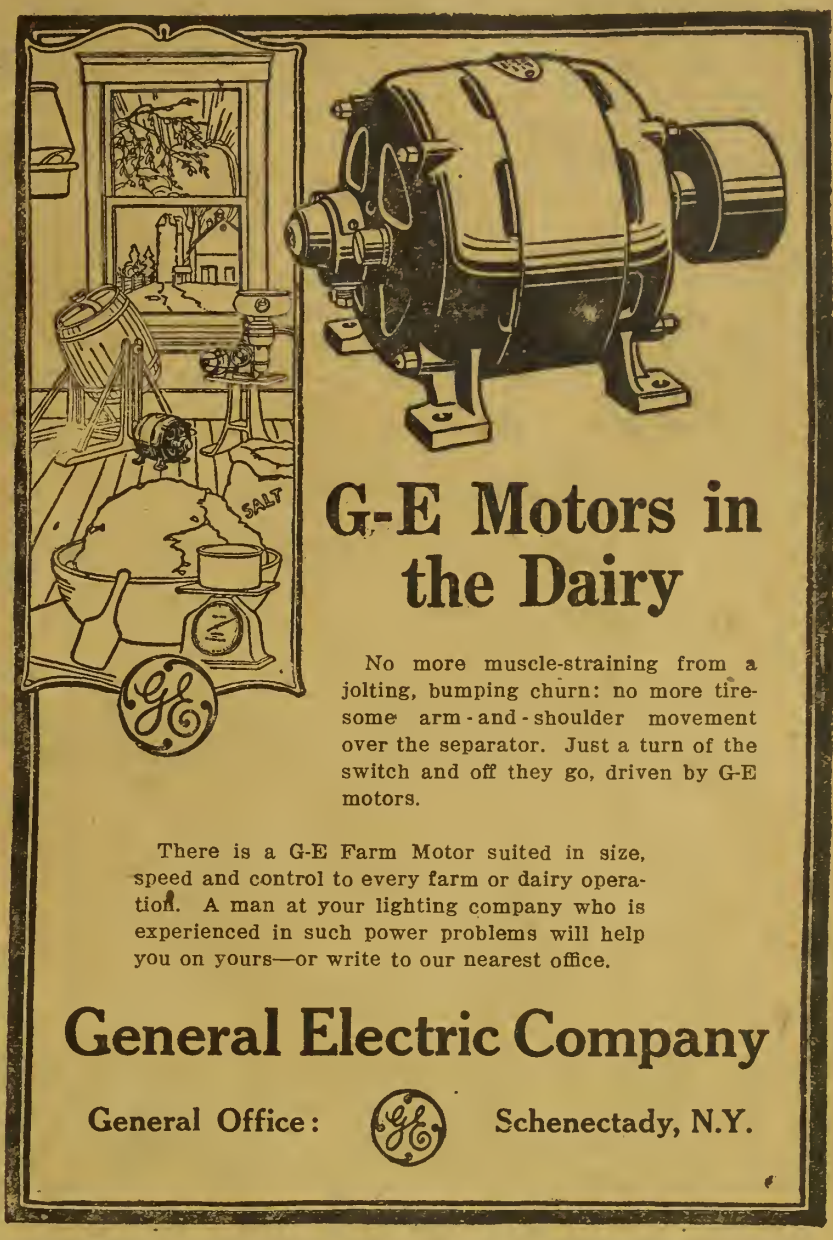
Cultivate every two weeks for the first two months, irrigating three times about three weeks between irrigations.

The soy bean has about the same range of climatic adaptation as corn and can be grown on nearly all types of soil.

In Asiatic countries, especially China, the bean is second only to rice in importance as a food crop. As a summer crop in citrus groves it deserves especial consideration. Its root system is very strong and its nitrogen gathering bacteria are unusually heavy and I believe it will prove to be one of the favored soil builders in the near future.

It has been learned that sweet potato seed and slips from Texas districts infested with weevil have been shipped to California. This information was forwarded by a Texas entomologist who says that Texas has no quarantine laws to prevent such shipments. The weevil, he says, is creating havoc in the sweet potato industry of some of the Southern states.

Corona shipped 375 carloads of citrus fruit last year, netting the growers approximately $700,000.



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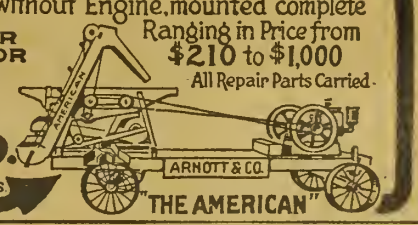

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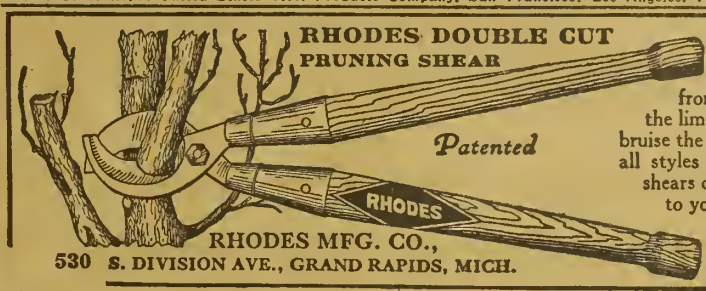

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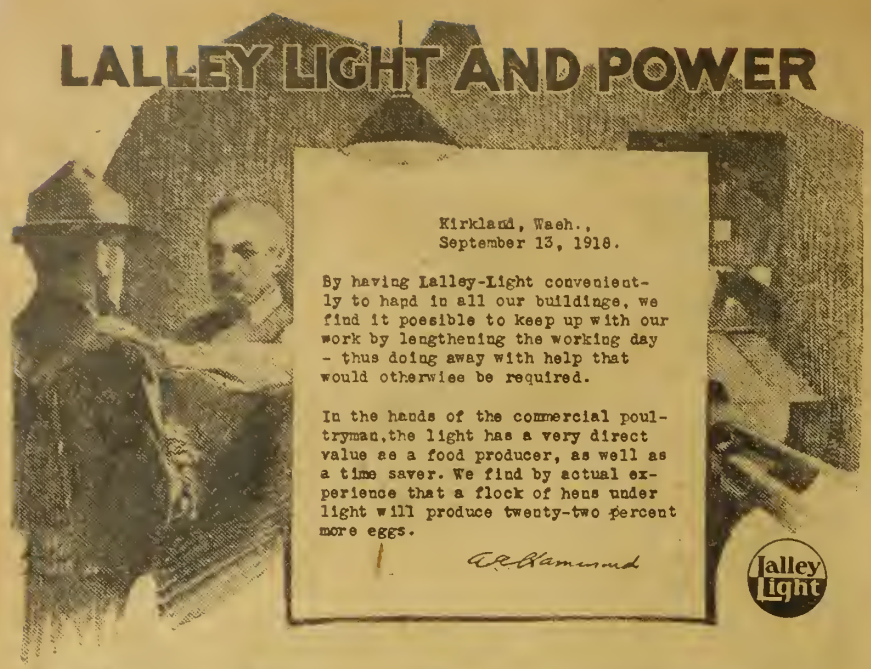
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War is teaching thousands of farmers that Lalley-Light is a labor-saving necessity of utmost value; and that after the war the need for it will be even greater than now.

Men are leaving the farms to fight. Yet the world looks to American farmers to feed it while it battles; and must look to us for food long after peace has come again.

Inexhaustible Lalley electric light and power are taking the place of those who go—saving the work of farm hands — saving women's work —lengthening days that are all too short, and helping men do more.

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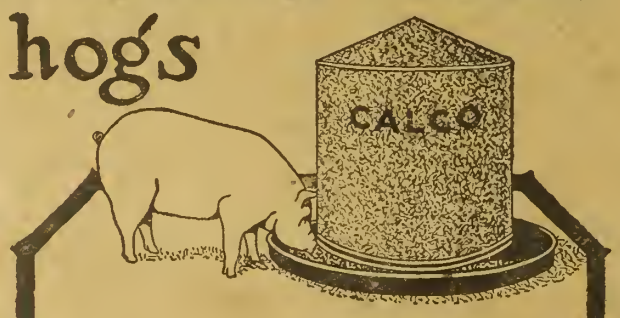

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State Aid for Horse Breeders

The question of an adequate horse supply, for the future, is giving no little concern to those who are in close touch with the horse industry. There are unmistakable signs pointing to an actual shortage of desirable horses in the comparatively near future. A number of plans for stimulating breeding operations have been suggested from time to time. Now comes Wayne Dinsmore, secretary of the Percheron Society of America, with a plan for extending state aid to stallion owners. The idea is not new. Indeed, nearly every European country has been subsidizing the horse breeding industry for years, and this aid has been largely responsible for the high development attained in France and Belgium.

It is quite possible that the question will be placed before a number of legislatures this winter.

In referring to the proposed plan, Mr. Dinsmore says:

The maintenance of an adequate horse supply is one of our fundamental needs, both from the standpoint of food production and national defense.

How this may be carried out is our problem. High priced grain, hogs and cattle, have created profound disturbances in our usual agricultural practices. Our supply of horses, such as it was, was sufficient for our needs for the past four years, and the great curtailment in horse breeding which all experienced men know has taken place has not yet affected our agricultural effectiveness. It is admitted, however, that it will do so if effective measures to encourage the breeding of good horses be not taken.

The key to the situation lies in the use of good sires. These cost too much for individual farmers to own. Eight mares is the average owned on a good 200 acre farm. One stallion, worthy of service, should have 100 mares per season. To keep a stallion for use on the mares on a single farm is wasteful, as he can and should be available for the use of 12 or 15 farms. Farmers themselves can not take time from their own operations to travel a sire, and as it is not profitable to a man to own and travel one sire for public service, particularly if he is a good one, we are rapidly reaching a point where men who have good mares have no good sires available.

The same situation has arisen in other countries. France met it by granting government subsidies to sires of approved stamp, thereby designating them as suitable for reproductive purposes, and adding enough to the earnings of a sire to justify men in owning 15 or 20 stallions, which were maintained and traveled in localities desiring their services. This system has been in use in France for more than 100 years and has given admirable results. Belgium has had a somewhat similar plan in force for 50 years, with the added proviso that the amount of the government subsidy increased each year if the horse was kept in use in one locality for three years or more. This gave to little Belgium a race of horses famous throughout the world—which the greatest horsethief the world has ever known took to Germany to build up his own horse stocks.

Great Britain has had similar measures in force for some years, and Canada with a similar plan in use for two years past, finds it very successful.

State aid is needed to maintain an adequate supply of horses. It must come in the form of a state subsidy to approved sires. It can be administered through our stallion boards and it will bring back to the state $100 for every dollar expended. It must be state, rather than federal aid, for there are only about 20 states that produce a surplus of horses. These supply other states and foreign countries. As they benefit directly through the added wealth coming within their borders, which goes to the farmers, and through them to the business men in every other walk of life, it is strictly a state limited enterprise. The details of it will be worked out along lines already found successful in other countries. In substance, however, it will provide for an expenditure of about $50,000 per year, which shall be used to pay 20 per cent of the service fee of approved sires.

The essential point I make is that we have now reached a point, long since reached in older countries, when we must have state aid to maintain an adequate horse supply, and that such aid is justified by precedent, experience, and financial returns accruing to the states granting such assistance.

AMERICAN ROYAL CHAMPIONS

At the American Royal Live Stock Show held at Kansas City, November 16-23, the following championships were awarded:

Shorthorn: Senior and grand champion bull—Villager's Coronet, owned by Uppermill Farm, Wapello, Iowa; junior champion bull—Anoka Omega, owned by Anoka Farms, Waukesha, Wisconsin. Senior champion cow—Pleasant Princess, owned by H. C. Lookabaugh, Watonga, Oklahoma; junior and grand champion cow—Clover Leaf Gloster, owned by W. C. Rosenberger & Sons, Tiffin, Ohio.

Herefords: Senior and grand champion bull—Repeater Junior, owned by O. Harris & Sons, Harris, Missouri; junior champion bull—Repeater 129th, owned by O. Harris & sons.

Aberdeen-Angus: Senior and grand champion bull—Enlate, owned by Escher & Ryan, Irwin, Iowa; junior champion bull—Bar Marshall, owned by Escher & Ryan. Senior and grand champion cow—Erica McHenry 39th, owned by Escher & Ryan; junior champion cow—Eritus, owned by C. D. & E. F. Caldwell, Burlington Junction, Missouri.

VALUE OF COTTONSEED HULLS FOR STOCK FEEDING

Written for California Cultivator
By F. W. Woll

Several inquiries have been received with regard to the value of cottonseed hulls for feeding farm stock. This by-product is used extensively in Southern cotton states as a cheap substitute for hay in feeding steers, dairy cows and sheep, especially fattening cattle, and is also fed in the Imperial Valley, at or in the vicinity of the cotton mills. The hulls are generally fed mixed with cottonseed meal, in the proportion of four or five parts of hulls to one of meal, these two feeds making up the entire rations for the stock. The hulls are a rather unpromising feed, being dry, hard, and covered with a fuzzy lint. They contain, on the average, about four per cent protein, two per cent fat, 45 per cent fiber, and 35 per cent nitrogen-free extract (starch-like

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compounds), and three per cent ash. Only six per cent of the protein, 34 per cent of the nitrogen-free extract and 47 per cent of the fiber is digestible, so that practically the only nutrients they furnish are digestible carbohydrates, which amount to about 34 per cent.

The hulls resemble more closely cereal straw in chemical composition, digestibility and nutritive effect, than hay or other coarse feeds. Straw likewise supplies carbohydrate nutrients only, practically speaking; viz., on the average around 40 per cent. The coarsest of the cereal straws rarely contain over 40 per cent of fiber, however, against 45 per cent in the hulls, which means that more of the digestible matter is expended in masticating and digesting the hulls than in the case of straw, and less net energy is therefore left for the uses of the animal, for repair or new building of tissues, or for manufacture of animal products. The latest data on this point shows that hulls have a net energy value of about ten, against 35 for oat or barley straw. They may possess some additional value when fed with heavy feeds, like cottonseed meal, in the way of making a lighter mixture that is more readily acted upon by the digestive juices than the meal itself, but it is evident that they cannot be considered worth more than good cereal straw at best, and that a price of $20 a ton, as asked, is entirely excessive, even at present day feed prices.

CALIFORNIA EDUCATIONAL BUTTER AND CHEESE SCORING CONTEST

The third scoring of the 1918 California Educational Butter and Cheese Scoring Contest was held at the University Farm at the close of the practical butter makers short course. In connection with the scoring the California Butter, Cheese and Ice Cream Makers Association held their second annual meeting and judging contest.

Fifteen cubes of butter and three cheeses were entered for scoring. T. J. Harris, L. M. Davis of San Francisco and S. L. Denning of Davis did the judging. N. Nyborg of the Modesto creamery and H. Dons of the University Farm creamery tied for first place in butter with an average score of 96¼. O. R. Lynch of the University Farm creamery entered the highest scoring cheddar cheese, which scored 94½. A. F. Boies of Patterson was given a complimentary score of 93 on his jack cheese.

FIRST TULARE SALE A SUCCESS

The initial consignment sale of Holsteins, held at Tulare, November 20-21, served to distribute an excellent class of cattle at prices that were generally satisfactory, but that in many cases represented real bargains. The sale totaled $26,950. Mature cows averaged $303 and the bulls averaged $333.

Rose De Kol Conde, consigned by Bridgford Company, Knightsen, a young cow with a record of 24.42 pounds butter at 26 months of age, topped the sale at $1000 and fell to the bid of W. J. Hidgon, Tulare.

The bull division was headed by King Ignaro Mead, a son of King Mead of Riverside. This youngster was consigned by Charles Yocum, Tulare, and sold to Frank Helm, Fresno, for $675.

A remarkable feature of the auction was the unusual local support accorded the event. Business institutions declared a half holiday and practically the whole community turned out, thus furnishing splendid recognition of the importance of the dairy industry to the prosperity of Tulare County.

The sale was under the efficient management of C. L. Hughes of the California Breeders Sales and Pedigree Company. Col. Ben A. Rhoades wielded the hammer.

SHEEP AND DOGS

There is a nation-wide movement for greater protection of sheep from dogs.

Around every little town there are a lot of curs that are no good for any purpose and on any number of ranches there are from one to half a dozen of the same kind.

It seems as though there should be some way to eliminate the dog menace, but in the absence of any positive relief, high taxation and the killing, by some specially appointed officer, of all dogs not tagged would be a big help.—W. S. G.

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200 Registered Duroc Jersey Hogs

Among them 20 splendid proven brood sows of first class breeding They are headed by CALIFORNIA'S DEFENDER, Junior Champion at Panama-Pacific International Exposition, and more than 150 of his get from these sows will appear in this sale. This great boar will himself be sold, and he is not only a proven show boar but a proven breeding boar as well. His get in this sale tell the story. The junior herd sire, ORION'S GOLDEN COL., will also be sold and he is first class in every respect, brought into this herd especially to breed to the daughters of California's Defender. The Durocs will be sold Wednesday, December 11.

200 High Grade Polled Angus Cows

The pick of several hundred head, with the view of offering buyers some top breeding cows of this excellent breed in this sale. Our entire herd of Angus cows had an 85 per cent record last year with not a single death from disease in the herd. All the beef cattle will be sold Wednesday, December 11.

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Reds and roans of frame and substance, also the pick from several hundred head.

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17 Registered Percheron and Belgian Mares

16 Registered Percheron and Belgian Stallions

Including all of our well known show winners, breeding mares, and service stallions. A very rare opportunity to secure high class registered horses at a time when the future of the draft horse business looks especially bright. All the horses will be sold Thursday, December 12.

100 High Grade Brood Mares, Work Horses and Mules

These are mostly young, and represent the pick from the many mares, horses and mules that we have owned during the past several years.

$50,000 Worth of High Class Farm Equipment and Implements

This tremendous offering of implements and equipment is mostly of comparatively recent purchase, some of it absolutely new and unused, and all of it in first class condition. It includes five 15-35 Sandusky Tractors; two Bull Tractors; thirty Bain, Studebaker, Old Hickory, and Kentucky wagons; one combined harvester; drills, plows, cultivators, mowers, rakes, tedders, loaders, stackers, special bean and beet machinery, potato diggers, gas engines, spraying outfits, in fact tools and implements for every crop. We will start to sell implements Friday morning, December 13, and continue until all are sold.

TAGUS RANCH is five miles north of the city of Tulare on the main cement State Highway.

HOTEL ACCOMMODATIONS may be had at Hotel St. Maxon, Tulare; Hotel Johnson, Visalia; Hotel Kings, Hanford, all of which are within easy distance by auto. Motor busses will leave Hotel St. Maxon and Hotel Johnson on days of sale. All trains will be met at Tulare.

Catalogs in preparation. Write to sales manager for copies.

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Pacific States Corporation

Tagus Ranch, Box D, Tulare, Cal.

Hulett C. Merritt, Pres. Hulett C. Merritt Jr., Vice-Pres.

Auctioneers: Col. Ben A. Rhoades; Harold B. Rhoades, Los Angeles, Cal. Sales Manager: C. L. Hughes, 211 Ochsner Bldg., Sacramento, Cal.

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STANISLAUS COUNTY LEADS
All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

Segis Pontiac De Kol Dutch
Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale E. E. Freeman, Rt. 8, Modesto

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Registered Holsteins of best breeding. Young bulls for sale.
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Our Senior Herd Sire is KING KORNDYKE HENGERVELD ORMSBY 7th
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This blood has made some of the world's greatest producers.
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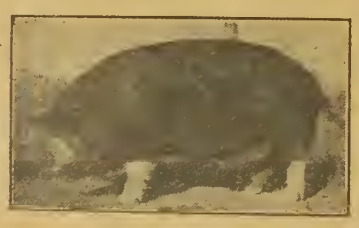

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Forty-three of our litters this year averaged ten to the litter. We sell foundation sows and boars to head your herd from our easy keeping, heavy producing strains. Write to

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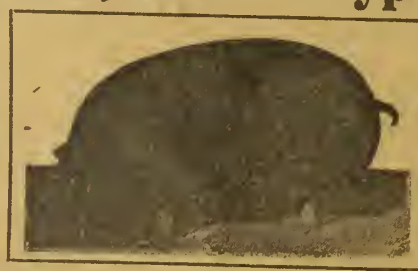

Live Stock News Notes

Hog Expense Mostly Feed

Figures compiled by the department of farm management of the University of Illinois indicates that from 85 to 90 per cent of the total expense of producing pork under farm conditions is for feed, as shown under three items, (1) feed purchased, (2) feed grown on farm, and (3) rent of land used for pasture. The figures were obtained by records kept on 20 farms during 1917 and 30 farms during 1916.

Imperial Banks to Furnish Market Reports to Customers

Several Banks in the Imperial Valley have made arrangements whereby they will furnish their customers with a daily telegraph market report covering the live stock and produce markets of the principal Eastern and Coast cities.

The reports are furnished through the United States department of agriculture, bureau of markets, 701 International Bank Building, Los Angeles, and constitutes a service that may be obtained free by making application to the above address.

Freeman After Yearly Records

E. E. Freeman, Modesto, recently started several of his registered Holsteins on test. The senior four year old, Una Estrella De Kol 2nd made an official record of 19.61 pounds butter in seven days, and the five year old Vina Pietertje Hengerveld De Kol made 21.92 pounds butter in seven days. Mr. Freeman is not so much concerned about short time records and is planning to dovote most of his effort to yearly work, following the trend of Holstein progress. His herd sire is Segis Pontiac De Kol Burke Dutch, whose three nearest dams each made over 1000 pounds butter in one year, so he is amply prepared in the sire half of his herd for good yearly records.

Lewis Company Building High Class Herd

The Lewis Company, San Jose, picked up a rare bargain in the Second Modesto Sale, in the beautiful 27.89 pound cow, Potoki Johanna 2nd, sold by J. M. Campbell, Escalon. She will be added to the high class herd which the company has already established at Hollister.

A Promising Holstein Herd

H. A. De Wolf, Ripon, now has 20 registered Holstein cows milking and has laid the foundation for a very good herd. He has been especially fortunate in securing heifer calves from the bred cows he has bought and as a result has several fine young daughters of Sir Veeman Korndyke Pontiac, 30 pound son of Sir Veeman Hengerveld; two daughters of King Mead of Riverside; and the latest arrival is a beautiful daughter of the Gibson Company herd sire, Prince Alcartra Korndyke, son of Tilly Alcartra. The dam of this calf is a daughter of Prince Gelsche Walker that made 577 pounds butter in one year as a junior two year old. Mr. De Wolf purchased this good heifer in the Second Modesto Sale for the very modest sum of $410.

A Successful Holstein Sire

W. F. Mitchell, Visalia, is getting an unusually attractive lot of calves from his herd sire, Prince Hiske Walker, son of Prince Gelsche Walker and Hiske of Riverside, and therefore full brother to the 34 pound four year old Lady Hiske Walker. Many of the sons and daughters of this bull are of real show quality, including some that H. E. Cornwell, Modesto, has in his herd.

More Herefords to California

Will Henn of Kansas City, Missouri, who is holding his show string of Hereford and Shorthorn bulls at Los Angeles, awaiting the opening of the Liberty Fair, has recently sold five head of senior yearlings and two year olds to the Diamond Bar Ranch, Spadra.

Included in the lot were two grandsons of Perfection Fairfax, and the good two year old Beau Banner 5th by Beau Perfection 9th—a full brother to the noted Woodford.

Live Stock Receipts Show Big Increase

During the first 10 months of the current year 61 markets received 20,431,594 cattle; 34,579,735 hogs; and 17,675,200 sheep. During the same period last year the receipts were as follows: 18,539,919 cattle; 30, 284,680 hogs; 16,329,576 sheep.

Large Area Released from Tick Quarantine

On December 1, 79,217 square miles in nine Southern states will be released from the federal quarantine against the cattle fever tick. This year's release represents the greatest area freed in any one year since the campaign was begun against the parasite.

Lift Embargo on Breeding Animals

The embargo on express shipments of live stock and poultry for breeding purposes from December 10 to 31 is to be lifted, according to word received from the railroad administration by the United States department of agriculture. The department pointed out to the railroad and express officials that its food production campaign would be retarded materially if an embargo were placed on the shipment by express of live stock for breeding purposes. This embargo included all territory east of the Missouri River, including Minnesota.

Conejo Ranch Sales

H. H. Braly states that Conejo Ranch is experiencing a keen demand for Hampshires and that recently several of the best sows in the herd have been sold.

C. J. Gilbert, who is establishing a high class herd near Lancaster, secured Mary Pickford, firtst in the aged class at Sacramento, 1918; Leading Wave 3rd, third in the same class; and Wavelet, second prize senior yearling sow.

J. C. McGill, owner of the Indianapolis baseball team, purchased Leading Wave 2nd, second in the aged class at the last state fair. The price paid for this sow was $500.

May Echo Sylvia to Bell Farm

The Holstein cow, May Echo Sylvia, dam of the $106,000 bull, has been sent by Avondale Farm, Brockville, Ontario, to the Bell Farm. Coraopolis, Pennsylvania, to be bred to King Valdessa Pontiac.

State Record for Higdon

W. J. Higdon, Tulare, has been notified by the Holstein-Friesian Association that the junior two year old heifer, Madrigal Mookie 2nd, now holds the California record for her age for a half year's production, having to her credit 13,107.8 pounds milk and 498.98 pounds butter.

New Hereford Officers

At the annual meeting of the American Hereford Cattle Breeders' Association, held at Kansas City, Missouri, during the week of the American Royal Live Stock Show, H. A. Moxley of Shelbyville, Kentucky, was elected president; A. B. Cook of Townsend, Montana, vice president; and R. J. Kinzer secretary.

Langwater Guernsey Makes Notable Record

Langwater Heroine 49483, owned by F. L. Ames, North Easton, Massachusetts, recently completed a record of 16,221.1 pounds of milk and 805.64 pounds of butter fat, at the age of three and one-half years. This record has been exceeded by only two Guernseys in this division, Azucena's Pride 2d 24957 and Governor's Pauline 30472, and places Langwater Heroine 49483 in third place in Class D.

Langwater Heroine 49483 has a previous record made in Class G of 12,363.9 pounds of milk and 612.34 pounds of butter fat. She finished her first record on April 13, 1917, and calved again on July 12, 1917.

She is one of the last daughters of Imp. King of the May 9001.

LIVE STOCK QUERIES

Ox Warbles

I have a Holstein heifer that has worms under the skin, along the back. How can I remove them and what are they called?—P. J., Fresno.

I notice matter oozing from small eruptions along the back of my cow.—Subscriber, Lindsay.

Both the above animals have warbles, which are very common at this time of year.

R. W. Wells, who recently spent six months in Arizona holding demonstration meetings with stockmen, makes the following suggestions on the control of ox warbles:

"The white grubs found in the backs of cattle should be squeezed out. If permitted to come out by themselves they drop to the ground and transform in about three weeks to the adult fly. The adult fly is the one which causes the cattle to twist their tails and make for the brush or for a mudhole. The fly does not feed and it does not sting. It lives only four or five days, just long enough to lay its eggs for the new generation. The fly tries to lay her eggs on the hair around the feet, usually not far from the hoof. The eggs are stuck in a row on the hair. They hatch in about four days and the young maggots burrow through the skin around the feet and beneath the skin, make their way to the body of the animal."

These grubs injure cattle in several ways. They reduce the milk flow of dairy stock; they reduce the price of the hide of a beef several cents a pound, and cause "jelly beef" along the back. The adult fly causes the cattle to crowd into mudholes where they often become mired down.

Every grub squeezed out is a fly killed. If the dairy herd is gone over twice a week, practically every one of the grubs may be caught.—R. P. R.

Grain Ration for Dairy Cows

Kindly suggest through the Cultivator, a grain ration for cows. My cows will average 900 to 1000 pounds in weight, and, on alfalfa alone, are milking an average of four and one-half gallons a day. I would like to feed a grain ration with the hay.—Subscriber, Orland.

With grain high and mill feeds hard to get the question of supplying a satisfactory ration in one that is giving dairymen considerable concern. Silage and alfalfa hay has proven a "life saver" to many dairymen. With cows that are producing as well as yours on alfalfa it is probable that you can afford to feed grain. I say probable, because only an actual trial will tell.

Any of the following rations, fed as supplements to alfalfa hay, will be satisfactory and you will be governed in your choice by the local cost and available supply.

Rolled barley alone, does fairly well, but ordinarily a ration is improved when made up from a variety of feeds; equal parts of ground or rolled barley, bran and oats; beet pulp 50 per cent, cocoanut meal 25 per cent, bran 15 per cent, barley five per cent, cottonseed meal five per cent; barley four parts, bran two parts, oil meal one part; dried beet pulp five parts, barley four parts, cottonseed meal one part.

A fairly safe rule to follow is to feed one pound of grain for each three or four pounds of milk produced.

Feeding Value of Acorns

How does the feeding value of acorns compare with barley?—S. C. H., Gorman.

In 100 pounds of barley there are 79.4 pounds of digestible nutrients; in 100 pounds of acorns there are 47.1 pounds of nutrients. Barley contains nine per cent protein; acorns 2.3 per cent protein.

SUGAR AVAILABLE FOR HOME MEAT CURING

Those who wish either brown or white sugar for curing home-butchered meat can secure it by applying to their county or state food administration official.

A movement is on foot to organize the Imperial Valley Sheep and Wool Growers' Association.

Do *you* think there is no competition?

If anyone thinks there is no competition amongst the big packers he ought to go through a day's work with Swift & Company.

Let him begin at the pens when the live stock comes in; let him try to buy a nice bunch of fat steers quietly and at his own price, without somebody's bidding against him.

Let him realize the scrupulous care taken at the plant that not one thing is lost or wasted in order that costs may be held to a minimum.

Let him go up into the office where market reports are coming in — and reports of what other concerns are doing.

Let him watch the director of the Swift refrigerator fleet, maneuvering it over the face of the country like a fleet of battleships at sea.

Let him take a trip with a Swift & Company salesman and try to sell a few orders of meat.

Let him stay at a branch house for an hour or two and see the retail meat dealers drive their bargains to the last penny as they shop around among the packers' branch houses, the wholesale dealers, and the local packing plants.

And then, when the day is over, let him have half an hour in the accounting department, where he can see for himself on what small profits the business is done. (Less than 4 cents on each dollar of sales.)

If he still thinks there is no competition in the meat business it will be because he wants to think so.

Swift & Company, U. S. A.

A nation-wide organization owned by more than 23,000 stockholders

Economy Stock Powder

fed regularly to sheep will keep them free from worms. It also acts as a tonic, a laxative, a blood purifier and as an aid to digestion cannot be improved upon. Will eliminate BLOAT and ALL AILMENTS COMMON TO SHEEP.

SEND FOR A FREE SAMPLE.

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Registered young bulls from best families.

Registered Berkshire Pigs

Masterpiece, Longfellow, Robin Belle, Rookwood, Duchess and Rival's Champion's Best Strains. Fine individuals of both sexes — we pay registration fee.
Careful attention given to mail orders

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GIVES GREATEST VALUE FOR LEAST MONEY
IT MAKES THEM FAT

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—Scientific, intelligent budding.
—Best care and cultivation.
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You will want our big 1919 illustrated Catalogue and Price List—brim full of interesting and helpful information to the orchardist. It describes in detail all well known varieties of deciduous, citrus and ornamental trees, vines and roses.

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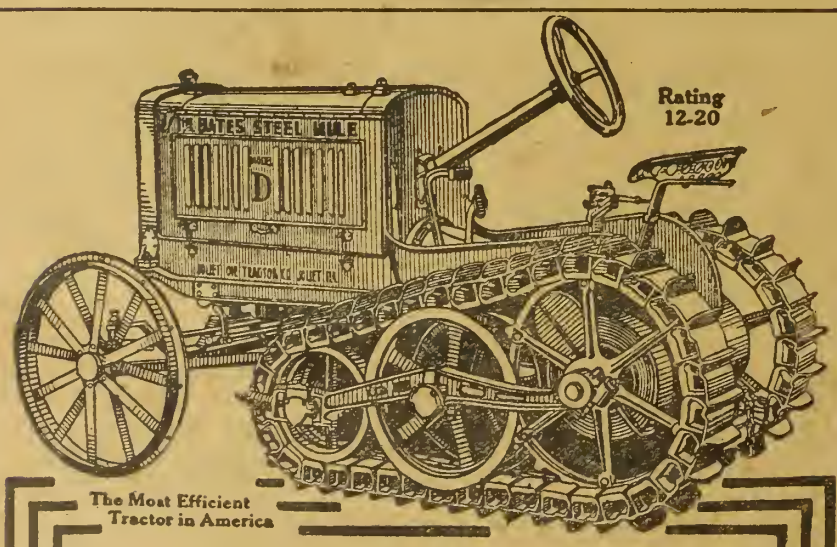

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Both Drivers Level When Plowing

The twin crawlers run on the unplowed ground and one front wheel follows the furrow for self-steering. So the Bates Steel Mule runs upright without the side thrust on bearings that comes where a tractor leans over because of a driver running in the furrow.

Perfect flexibility; unit construction; hardened cut steel gears; Timken bearings; heavy duty valve-in-head kerosene motor; and long life crawlers that double the usefulness of the tractor—are some of the added features of superiority.

Follow the crowds. Come and look over the many features of the Model "D" STEEL MULE we have on exhibition.

The only Crawler Tractor adapted to Beet Cultivation without making changes

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Excellent Proposition offered Live Agents.
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ROLLING TRACTOR SCHOOL

We have from J. C. Beswick, director of vocational war work, the following schedule of dates for opening sessions of tractor training centers:

Unit No. 1. — Madera, October 7; Reedley, October 21; Lemoore, November 4; Tulare, November 18; Delano, December 2; Brawley, December 16; El Centro, December 30; Hemet, January 13; Ontario, January 27; Santa Ana, February 10; Van Nuys, February 24.

Unit No. 2.—Merced, November 18; Oakdale, December 2; Patterson, December 16; Elk Grove, December 30; Lincoln, January 13; Gridley, January 27; Chico, February 10; Corning, February 24; Willows, March 10; Williams, March 24.

Owing to influenza quarantine Unit No. 3 has not yet been opened. This was to have opened sessions at Ventura, passing up the Coast to Santa Maria, King City, Salinas, Hollister, Santa Clara, Livermore, Concord, Napa, and Santa Rosa.

Entry Requirements

Classes are open to men engaged in agricultural work on farms, boys over 16 years of age now living on farms, men or boys over 16 years of age who are securing the training in order to engage in farm work of this character, men subject to draft who desire the training for army service, a limited number of women physically qualified for tractor operation.

It has also been suggested that, in order that those who really need the work most have an opportunity to join the class, a good faith deposit be required of all persons enrolling therein. This deposit should be made as a part of an agreement entered into by the student to the effect that he will conscientiously attend the class and will be responsible for any damage or breakage to equipment that may occur through carelessness on his part. Said deposit should be required with the understanding that should the student fail in any of the aboveo bligations it should become forfeit to the local high school district.

Mr. Beswick writes: "A greater responsibility than ever rests on the farmers, and as from five to twenty times more land can be cultivated by the use of tractors than by the old methods, this training is very important. In the centers where the training has already been given the farmers have been more than pleased with the course."

HOLSTEIN PRODUCTION SINCE 1894

In the November 16 issue of the Holstein-Friesian World appears a table of all the world seven-day milk records that have been made in the different classes since 1894.

In 1894 the full age record was held by Rosa Bonheur 5th, who produced 726.25 pounds; the present record for that class is held by May Echo Sylvia, who produced 1005.8 pounds—an increase of 38.48 per cent.

The senior four year old class record for 1894, was held by Inka 4th's, Pietertje Rose, whose production was 509.38 pounds as compared with the present record, held by Mildred Pietertje Abbeberk, of 856.9 pounds, which is an increase of 68.22 per cent.

Belle Sarcastic stood at the head of the four year old class in 1894, with a record of 548.5 pounds. The present class leader is Zarilda Clothilde 3rd De Kol, whose record of 817.4 is 49 per cent greater than the first record for that class.

Wietske's Papoose was the 1894 senior three year old record holder. Her production was 353.38 pounds milk. Jewel Pontiac Segis now heads that class with 768.8 pounds milk to her credit, which is an increase of 117.8 per cent.

The junior three year old record in 1894 was held by Mutual Friend 3rd with a record of 409.4 pounds. Nena Newman Cornucopia, whose record of 778.2 pounds has raised the standard 90 per cent, is the most recent title holder.

Since 1894 the senior two year old milk production record has been increased from 312 pounds, made by Agnes De Kol's Ellen, to 679.8 pounds, produced by De Kol Cornucopia, a total increase of 117.8 per cent.

The junior two year old record has likewise more than doubled—113.5 per cent—since Sadie Vale Concordia produced 317.6 pounds milk in 1894. The present record made in 1915 by Aaggie Nena Cornucopia is 677.6 pounds.

SANTA ANITA RANCHO
Anoakia Breeding Farm

Arabian-Thoroughbreds

Out of our choicest thoroughbred mares and sired by our famous imported stallion Ibn Mahruss we are offering some splendid two year olds. Also some especially desirable young saddle stock sired by Ibn Mahruss, world renowned Arabian desert stallion, and Don Castano, five galted saddle stallion, winner in many prominent shows.

Mammoth Jacks

We have for sale a number of two and three year old jacks, big, growthy fellows of exceptional breeding and quality.

Poland China and Berkshire Boars

Sired by the World's Fair winners, BANKER'S BOY and KINTYRE LAIRD, and by others of our herd boars of equal breeding.

Correspondence Invited

Anita M. Baldwin
Santa Anita - Calif.
W. H. Taylor, Supt.

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You want fine, healthy calves with fat sleek bodies—feed BLATCHFORD'S CALF MEAL. Prevents scours. Costs ¼ of what you can get for your milk.

Write for Pamphlet Shows you how to make two profits instead of one. We'll give you name of your nearest dealer.

Blatchford Calf Meal Co.—Dept. 4709—Waukegan, Ill.

Holsteins Are Rugged

The Holstein-Friesian Cow is large, strong and vigorous, full of energy and abounding vitality. It is able to turn to best advantage the roughage of the farm, converting it into large quantities of excellent milk for all purposes. She perpetuates herself through strong, healthy calves, and when useless in the dairy fattens readily and makes excellent beef.

If interested in

HOLSTEIN CATTLE

Send for our booklets—they contain much valuable information.

HOLSTEIN - FRIESIAN ASSOCIATION OF AMERICA, Box 120 Brattleboro, Vt.

SAFETY

We believe our conditions of sale are as definite and favorable to the buyer as it is possible to make conditions covering anything as variable and flexible as living animals

Safe sales are good for the buyer and best for the seller in the long run.

We accept high class registered animals in our consignment sales, or will sell your whole herd. Write us.

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You can purchase goods from our advertisers with positive safety. They are guaranteed.

FROM WAR TO PEACE

Continued from Page 571

farming. Further, no other business is conducted with so little use of credit. More than two-thirds of business transactions are made possible because of the use of credit.

The banding together of producers of a community to guarantee credit of the community "can't be done"—but is being done as certified to by editors from Massachusetts, Texas and other states.

"Free congressional seed!" Oh, forget it! Plainly the secretary does not endorse it. Not a single delegate present did either. That seed costs $200,000 annually.

Rural social life, sanitation, better homes and greater conveniences which farmers are demanding are worthy heartiest encouragement. In the one question of sanitation the farmer is not as advanced as the urbanite. The city is as a rule a more healthful place than the farm. It's a bit shocking to admit it but statistics prove it.

The postal zone law called for hot shot. Unfortunately we were not favored with the attendance of the postmaster general and the congressmen responsible for the passage of the postal zone law. But the injustice forced upon all publications, and especially upon the farm press, was passed up to another arm of the government. Congressman Kitchin's ears may not have burned but he was generally and nicely "burned up." E. T. Meredith, president of the Agricultural Publishers' Association, and a prominent Iowa democrat, was quoted by C. V. Gregory, publisher of the Prairie Farmer of Chicago, as saying that the democrats were planning to repeal the measure, because they were quite sure the republicans would do it anyhow when they obtained control.

This remark caused some merriment in which the secretary joined.

A half hundred busy minds evolved many ideas—many more were not expressed, but in merest outline other problems before the United States department of agriculture and the American farmer:

Bureau in the department having to do with agricultural economics or bureau of farm management; more perfect cooperative methods; farmers use credit more, be prompter in all payments and bankers extend accommodations; school teachers more and better qualified along agricultural lines; better county farm agents and far more of them; increased appropriations so that that after the war the present war basis may be maintained and farm bureaus increased; county agents should keep more complete and permanent records of their work; maintain our democracy, government agency should still be dominated by people, the people be dominated by the government; let the bureau of markets stop bull and bear raids; the income tax has been an educator in farm bookkeeping; single tax (tread lightly); secure averages in costs of farm products; continue national food administration—and on until a cabinet meeting called the secretary away.

He—David F. Houston, secretary of agriculture—is a big man and a lot of him is above his collar.—C. B. M.

RED CROSS AIDS AGRICULTURE IN JERUSALEM

A plan to increase at once the diminishing food supply of this region by placing plowing oxen at the disposal of native farmers unable to own them, has been launched here by the American Red Cross. The organization plans to buy large numbers of oxen, to be rented out by the day at nominal rates, or resold at cost to farmers. There are at present in this district but 65 plowing animals against 418 before the war; and food production is at a menacing level.

Jerusalem is to have its winter war garden, in regular American style except that winter is their gardening season. With the district faced with a serious food shortage, the American Red Cross here has launched a campaign for a war garden on every vacant lot within and about the city. At the same time, through this activity, the Red Cross is finding employment for scores of destitute native women in preparing the gardens. The planting season here follows the early December rains.

A. H. Cook of Yolo County has a novel way of harvesting this year. He is pulling his machine with a 45-horsepower tractor; but the hills on the land which he farms are too steep for the tractor, so he has six mules hitched between the engine and the machine, and now he moves right along over any of the hills.

The man who is behind the times has a view that should be stimulating.

Now's the Time

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Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Rolling Tractor School

In further answer to question of Subscriber, Falibrook, in last week's Cultivator:

Unit No. 1 will open four-week sessions at Ontario January 27, Santa Ana February 10, Van Nuys February 24. For dates of other schools and entrance requirements see Page 582.

Sorehead in Turkeys

What is the best remedy for sorehead in turkeys?—Subscriber, Brawley.

Sorehead in turkeys is treated just like sorehead in chickens. No better internal remedy has been found than flour of sulphur in the mash for a week or so. About five per cent of the mash can be made sulphur for a limited time. For turkeys that have been accustomed to a hard grain ration this treatment may be a little difficult, but in many cases the birds might be induced to take their medicine in bran or possibly mixed in curd or chopped green. Some experts advise removing the scab from each sore and painting with creolin, but this seems a very painful treatment. A dose of Epsom salts (one-half teaspoon to each bird) in moist mash, after the sulphur has been given for a few days is helpful. In some cases the flour of sulphur treatment seems to shorten the duration of the disease considerably, but it must be remembered that chicken pox, being a germ disease, cannot be cured immediately.—J. A. K.

Minorcas "Throw Back"

I hatched what I supposed to be pure blooded Minorcas this year. Some of them are the funniest looking chickens. A fourth of them are white, some spotted and the rest of them black and gray, and four of them had green legs, almost as green as peach leaves. Now the curiosity of it is, there have never been any white chickens on the place, and when my daughter hatched her chickens, from the same flock, she never had a white feather on hers and hers look larger and nicer than mine. I often would have one or two white feathers on my Black Minorcas but they generally lost them by the time they were grown. Now the why? I am curious to know.—Subscriber, Ceres.

Nearly all breeds "throw back" more or less. The fact that some of the Minorca chicks have more white feathers than others probably indicates that their mothers had more white blood than the mothers of the other chicks. In other words, the chicks your daughter hatched and those you hatched, while they had apparently exactly the same ancestry, probably had different mothers. It has been found by experimenting that the hens of the same pen, while they may look alike, will throw very different offspring. Some may throw mostly pullets, others mostly roosters; some big, vigorous chicks, others small, runty ones; and some never lay a fertile egg. The study of heredity is tremendously interesting, and we are learning that successful breeding depends on the characteristics of the hens used as mothers much more than has generally been supposed.—J. A. K.

Berries on Adobe

I have been reading your paper for a long time, I think that every farmer who fails to read it every week is losing money by neglecting it. Can you tell me whether or not blackberries, or strawberries will grow in adobe gumbo soil that cracks after it is irrigated? Will blackberries grow when the soil is covered with water or the soil kept wet all the time? I have a reservoir covering one acre that grows seaweed to perfection, alfalfa has proved a failure on this soil. I shall be glad to hear from any reader of the Cultivator who has had experience raising berries.—J. H. J., Lemoore.

This question was referred to H. Culbertson of El Cajon who answers:

"I have no experience with the above on that class of soil, nor have observed their growth under those conditions. I have seen good strawberries on black adobe soils of a granular or mealy make up. If I understand the term 'gumbo,' as the questioner describes his soil, it would be the opposite of the granular, or a compact pasty condition. In this a lack of experience and observation forbids attempting any cultural explanations. Several years ago there were large quantities of strawberries grown out towards the Coast from Los Angeles on adobe soil. Some one out there might answer the questions."

Home Made Vinegar

Would you kindly give me advice as to what to do with the juice of apple, peach, grape and other fruit parings and wastes which we saved for making vinegar. It has turned to vinegar but has a moldy taste. Last year had better luck but a thick scum kept gathering. What can we do to prevent that?—Subscriber, Los Angeles.

This question was referred to W. V. Cruess of the state university, who answers:

"Would suggest that the inquirer use a small amount of ordinary bread yeast to start fermentation of the juice. A cake of compressed yeast will be sufficient for five gallons of juice. When the yeast fermentation is complete, which will be in about two weeks time, I would advise that he add about one pint of strong vinegar to each galion of the fermented juice. This will check the growth of moid. When the vinegar has become sour enough for use it should be placed in bottles that are filled absolutely full and corked tightly. If the scum which appears on the vinegar is slimy and tough it is only vinegar 'mother' and is not harmful to the vinegar. If the scum is white and wrinkled and easiiy broken it consists of 'wine flowers' which will spoil the flavor of the vinegar. The addition of one pint of strong vinegar to each gallon of fermented juice will prevent the formation of this 'wine flowers' film. If the vinegar has become moldy there is practically nothing that can be done to remove the moldy taste. It is sometimes possible to remove part of the moldy flavor by shaking the vinegar with a small amount of cotton seed or olive oil."

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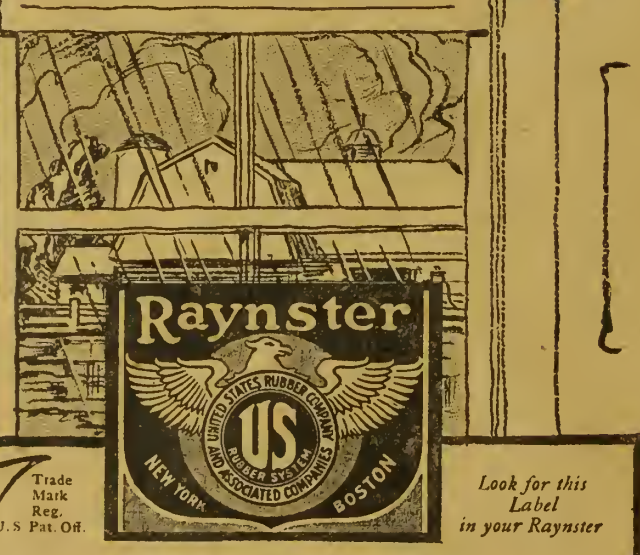

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Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Settling Estate in Iowa

A married woman having real estate in Iowa in her own name comes to California with her husband and three children. In case of her death without will what about the Iowa real estate? How soon can the estate be settled?—Subscriber, Van Nuys.

Her estate would have to be probated in Iowa as to the real property there and would descend in accordance with the laws of Iowa and not of California. The time within which it would be settled would depend largely upon the amount of the estate.

Trespassing Animals

Is there any liability upon the part of one who has caught a cat in a trap under his rabbit coops after repeatedly losing rabbits on account of neighbors' cats? The rabbits have been duly fenced and the neighbors notified of the injury their cats were doing.—Subscriber, Los Angeles.

There is a decided variance among the cases upon this matter of trespassing dogs and cats; in fact it

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seems that the courts have treated from an individual standpoint each case arising. The weight of authority, however, seems to be as follows: It is not enough to justify the killing of a trespassing dog, cat, or other animal merely because they trespass, or merely because they may by the act of trespass or during the trespass do some comparatively small act of damage or there is fear of their doing such small damage; in order to justify the killing of the animal it is necessary that the animal be caught in act of doing damage relatively important to the value of the animal killed. It should possibly be further shown that the owner of the animal had knowledge of the fact of precedent damage caused and the fact that traps were set or poison out and warned to keep his animal at home. It would be the opinion of the writer that in the above case there would be no liability upon the part of the rabbit owner. The above statement is made in view of the many questions along this line which have come in.

Exemption from Seizure for Debt

What is the exemption law of California with respect to a rancher? — Subscriber, Laton.

Implements of husbandry not exceeding in value $1000; also two oxen, or two horses, or two mules and their harness, one cart or buggy and two wagons, and food for such oxen, horses, or mules for one month; also, all seed, grain, or vegetables actually provided, reserved or on hand for the purpose of planting or sowing at any time within the ensuing six months, not exceeding in value the sum of $200; and 75 bee hives; one horse and vehicle belonging to any person who is maimed or crippled, and the same is necessary to his business; necessary household or kitchen furniture, including a sewing machine, stove, bed and furnishings thereof, provisions and fuel actually provided for family use sufficient for three months, and three cows and their sucking calves, four hogs with their suckling pigs, and food for such cows and hogs for one month, also a piano, shot gun and rifle. There are several other exemptions such as savings and loan association stock.

Crop Lease

A crop-leases certain land to B. The lease provides substantially as follows: B shall deliver to A or order three-eighths of all grain or other crops produced upon the farm of every kind, manner, or description, crops to be sacked and baled and delivered at certain warehouse. Is A entitled to three-eighths of the corn fodder produced? — Subscriber, Bonner's Ferry.

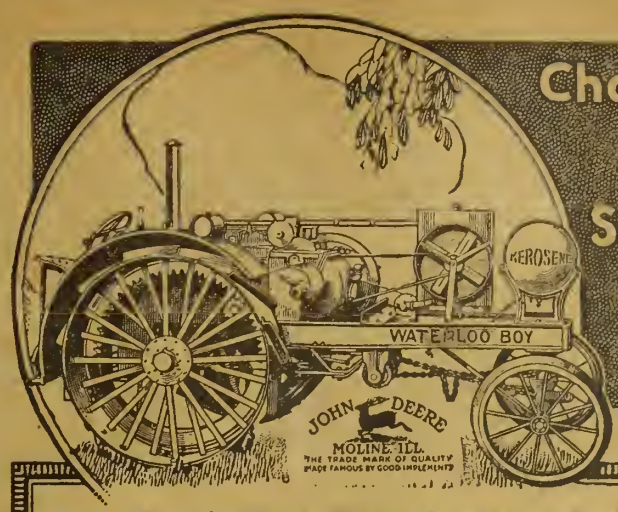
The accepted legal definition of the word "crop" is "everything produced from the earth by annual planting, cultivation, and labor." Under such definition and under the wording of a lease as above stated A would be entitled to his proportion of the corn fodder, except only in case there was a known usage or custom prevailing in the locality wherein the farm was located concerning such fodder. In such instances it has been held that where such custom or usage was known to both parties and was general, it might be presumed that the contract impliedly embodied such custom and was made with reference to the same.

Broker's Fee

In case of a party receiving and utilizing information offered him to his profit from a broker, being aware of the fact that the information was part of the agent's stock in trade as evidenced by his announcements that he is compelled to charge his patrons "a small fee or commission" upon the amount of business secured by means of the information, has the broker any legal recourse for the collection for his services?—Subscriber, San Jose.

While the question should be made more definite for an answer to be of great utility to the individual subscriber it may be generally answered for the benefit of readers as follows: One of the essential elements of a contract is that it be certain; there is apparently nothing in the above to show what the commission may be. There must be a meeting of the minds

Continued on Page 591



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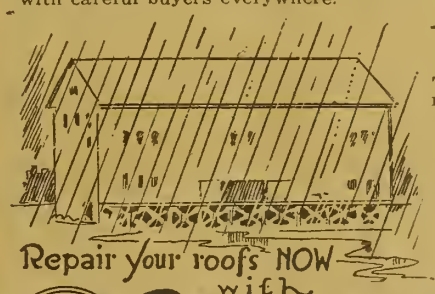

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Bargain in Bartlett Pears. Write to L. J. Eachus, Oak Mound Nursery, Lakeport, Lake County, California.

For Sale — Choice, young, thrifty Citrus Trees. W. W. Burns, 631 Security Bldg., Los Angeles.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale: inspection invited.

For Sale—Extra fine two year old Valencia trees with sour root. S. R. Coate, Anaheim.

Walnut Trees—Placentia and Eureka on black root. La Puente Walnut Nursery, Puente., California. Phone 103.

For Sale—8000 Mission and Manzanillo olives, $800 takes the bunch. York Nursery, Highland, California.

MISCELLANEOUS

Soil Analysis: Is It Worth While?—Here is an answer that everybody can understand: it gives PRACTICAL RESULTS. It brings the user of abundant returns,—1st, in the saving of fertilizers; 2nd, in increase of his crops; 3rd, in improvement of his groves. I ask everyone whose citrus grove is not doing all that it should do to send for my free new folder (a post card will do) which gives much interesting information on the subject. R. R. SNOWDEN, Agricultural Chemist, 320 Stimson Building, Los Angeles, California. Phones: Office Pico 842; residence West 702.

For Sale: Baled Shavings for poultry men and nursery men, also good for fertilizer, 25c per bale, at our factory, mail orders solicited. Miller Box Manufacturing Co., 201 N. Ave. 18, East 118, Los Angeles, California.

To Reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

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Hawley's Perforated Wooden well curbing. Send for descriptive catalogue. G. M. Hawley, La Mesa, California.

For Sale—500 seven gallon smudge pots, A-1 condition. Apply S. P. Moore, Azusa, California. Phone 234.

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Patents that protect are secured through The PACIFIC COAST PATENT AGENCY, INC., Savings & Loan Building, Stockton, California; send for our little booklet on "Patents."

HOGS

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A few fall boars left by Royal Superbus —also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
A. B. HUMPHREY,
Escalon, San Joaquin County, California.

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We Pay Cash for Hogs of All Sizes, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170. 3030 E. Vernon Ave., South 2712-J. Los Angeles.

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Castleview Berkshires are the typey, modern, quick-growing kind, choicest blood lines. Prices reasonable. Castleview Ranch, Berkshires exclusively, Santa Rosa.

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Heavy Laying S. C. Reds—Large vigorous cockerels and yearling males directly descended from New York, Boston, Los Angeles winners, $5.00 and $10.00. Satisfaction or money back. W. M. Marquam, Bishop, California.

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"Eastman's Bred-to-Lay" Hoganized and trapnested Barred Plymouth Rocks. Cockerels, Eggs. Fairmead Poultry Farm, Fairmead, California.

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For Sale—30 White Pekin ducks 5 months old from our winners at Pacific Coast Land show. A. O. and P. M. Forster, 2916 Otis St., Berkeley, California.

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For Sale — Rabbits, New Zealand and Flemish Giant, young stock. Paul Kruger Watsonville California.

WANTED

Wanted—Couple to raise bees, beans and turkeys on my 160 acres near Vista. H. R. Hanna, Rancho "El Pavo," San Marcos, California.

Wanted — 100 pounds damaged Seedless raisins. Sample to Jackson, Box 278. Monrovia, California.

Want to Hear From Owner of Farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

FROM SHELL TO ROASTING-PAN

Written for California Cultivator
By Jean A. Koethen

THERE is more than one way of raising turkeys. Probably there is more than one "best" way, for there is no feeding formula warranted to grow every turkey hatched. The successful turkey feeder is the one who best understands the nature and needs of the birds and feeds accordingly. To be sure, feeding is not the only thing to be considered. Cleanliness and a dry, comfortable environment have their place. Nevertheless, the little turkey that loses its slender hold on life is almost always a sacrifice to improper feeding, and so our first question is always, "What do you feed, and how much?"

Driving out one of the less frequented streets of Riverside last week we came on a flock of Mammoth Bronze turkeys so sleek and thrifty looking that I told my companion, "Some one here knows how to raise turkeys. I must find out how it is done."

The somebody proved to be Mrs. J. M. Burns, and she very willingly told me, for the benefit of Cultivator readers, just how she does it.

Mrs. Burns has but three breeding hens, and yet she has managed this year to raise 55 fine, healthy birds, weighing from eight to twenty pounds each, and they were contracted for sale before Thanksgiving at 35 cents a pound alive.

All the poults are cared for by turkey mothers, but not all are hatched by turkeys. Mrs. Burns' system is as follows: She sets the first turkey that goes broody after a sufficient number of eggs have been laid, and at the same time she sets a chicken hen. As each turkey is set a chicken hen is set with her. The turkey is given 15 eggs, the hen ten. From this number of eggs Mrs. Burns expects at least 20 turkeys, and these when they hatch are given to the turkey mother. The turkey is set in a carefully made nest on the ground in a box two feet long, 18 inches wide and about four inches high. One side is open so that the turkey may go in and out without jumping down upon the eggs, and the whole is carefully covered to keep out rain. As soon as the hatch is over she is moved to a coop to which is attached a run six feet long, three feet wide and three feet high. The top and ends and one side of the run are of wire, but the other side is tightly boarded so that the poults may aldays have protection from the wind. A run this size can always be moved to suit the weather, and the poults always have a windbreak if they need it. The coop and its run are moved to new ground every week. This is extremely important because there is no floor in the coop. Mrs. Burns believes it is absolutely necessary for the young birds to be on the ground night and day, and the ground must never be allowed to become foul. The wire which covers the run is so coarse that the poults can go in and out through it as soon as they are strong enough, but the mother is kept in confinement. The poults are kept inside the run the first two weeks by means of boards placed around it. and then are given their liberty.

One very noteworthy thing about the feeding of the turkeys on this ranch is that they get absolutely no green feed but the young, tender devil grass in the lot where they run. The turkeys and three cows are kept in an acre-and-a-half lot planted to devil grass. The cows keep the grass nibbled short, and every month the lot is flooded, so that the poults have always before them a supply of tender new growth. On this they run and thrive from the day they are let out of the coop till they go to the butcher. They have no lettuce, no chopped onion tops or dandelion, just plain devil grass.

Another noteworthy thing about the feeding of the poults is that they have no grain feed whatever and no cereal of any sort till they are two months old,—no bread crumbs, no steel-cut nor rolled oats, no cracked wheat. Until they have passed those first critical months the poults get nothing but boiled egg, curd and the grass they pick on range.

The first day out of the shell the young birds get no food at all. Late in the afternoon a dish of gravel or chick grit is placed before them so that they get their crops in working order.

The morning of the second day their mistress comes with a little chopped egg which has been boiled 30 minutes, sprinkled with black pepper, and scatters it on the ground in the run. She does this five or six times a day for a week. "Just precisely how much do you give at each meal?" I begged, for this is the critical part of turkey feeding. "I always leave them hungry" said Mrs. Burns, and I cook two eggs a day for 20 turkeys." Figure out how many teaspoons two eggs chopped fine will make, and it is plain the 20 poults do not get over a teaspoon at a meal. The hen is fed separately and does not have to share the babies' egg. This eliminates one difficulty that is encountered when poults are raised by a chicken hen. The chicken, being a more devoted mother than the turkey, always refuses to eat anything she cannot share with the turkeys.

The second week a little curd or cottage cheese is mixed with the boiled egg, and the amount of curd is gradually increased and the amount of eggs decreased till by the end of the second week the poults get nothing but curd. The quantity of curd is gradually increased till by the end of the third week the 20 poults are receiving what would fill perhaps half a small sauce dish, but they are still fed five times a day, and these frequent feedings continue till they are two months old. A box of gravel or grit is kept in the run, and a chick fountain of fresh water. Whatever else the poults have they must forage for. "But they must be kept hungry," Mrs. Burns repeated, "if they do not come running to meet me when I go to feed them I know I am feeding too much."

When the poults are two months old a little kafir corn, milo or wheat is added to the ration, but they are still fed four or five times a day. The grain portion of the ration is increased until by September the birds are ready for fattening.

In September whole corn is added to the other grain, but it is of necessity added gradually because the poults do not readily learn to eat it. By now they are fed but three times a day. As soon as they have learned to like whole corn two baskets are hung on posts in the lot, just high enough to be out of the way of the chickens. One of these baskets is filled with whole corn, the other with seed barley that has been soaked 24 hours. From now on the corn and barley are kept before the birds and they eat as freely as they will.

The poults are not allowed out in the wet while they are small and are greased a little under the wings at first with pure fresh lard so that there may be no danger of lice. A little later a box of ashes is placed in the coop for them to dust in. "What do you do for sick turkeys?" I asked, but Mrs. Burns shook her head with the oracular remark, "A sick turkey is a dead turkey," which is precisely my own conclusion.

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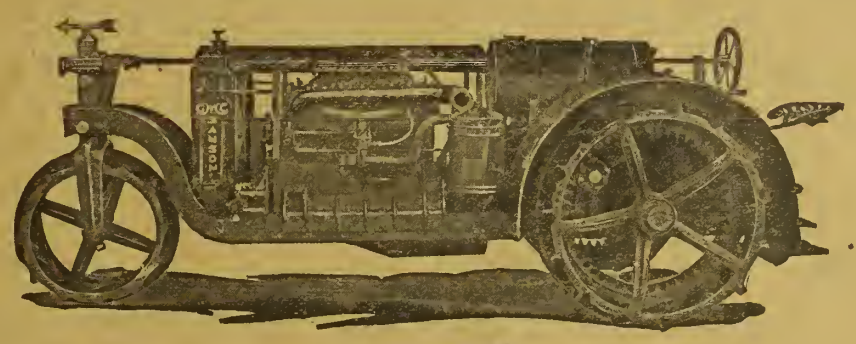

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Household Department

TWILIGHT IN THE MOUNTAINS

Written for California Cultivator
By Ida M. Blake

Together we wandered at twilight,
Among the great oaks and pines,
While shadows of evening gathered
On bushes and rambling vines.

Softly the breezes of evening
Told of the coming night.
The pines told the story in whispers
To all of the oaks in their might.

Birds heard the story repeated
And home to their nests quickly flew,
It wakened the owl from his slumber
And he solemnly called, "Who-o-o".

The brooklet so merrily babbling
Sang of the stars and the moon,
Of the wonderful day that had ended
And the night that was coming so soon.

Guardian angels in heaven
Lighted their lamps one by one,
And we whispered in the evening silence,
"'Tis night, and the day is done".

EXPLORING FOR SWEETS

HOW often the man who has dined well shakes his head at the offer of dessert! That shake traces back, perhaps, to the apple sauce, cranberry jelly or sweet pickle you served with meat. This satisfied his appetite for sweets and made a dessert unnecessary.

Follow the lead of this head shake and see where it takes you, for a wartime cook must have the imagination of an explorer. You may discover dinner combinations that satisfy in spite of "no dessert."

It is the custom in many lands to serve some sort of sweet dish with meat. There is the fruit compote of Spain, chutney of the Orient, baked bananas of the tropics and candied yams of our own southern states. These dishes have the long approval of those who dine well. They often satisfy the sweet appetite, yet call for little or no sugar. This trail then is worth following and may lead to hidden treasures in your own orchard and garden. Here are some dishes similar to those served in foreign lands that make excellent combinations with roast or fowl.

Apples Cooked in Cider

For a dish that needs neither sugar nor spice, try apples or pears cooked until clear in boiled sweet cider. Serve hot in large portions with meat.

Apples and Raisins

Simmer raisins in the water in which they were soaked overnight; add quartered apples and simmer together until done.

Apples and Bananas

Quarter fruit and place in a baking pan; dot each layer with butter and chopped nuts; bake in a quick oven basting frequently with a sauce made of a half cup of water, a tablespoon of white syrup and a little lemon juice.

Baked Pears

On baking days, try baked pears. Place pears in deep baking dish; cover closely and bake slowly until pears are a deep red.

Steamed Pears

Steam pears until tender with a little water and a tablespoon of white syrup.

Sweet Potatoes Plain

A sweet potato is full of sugar and very filling. They are best either baked or boiled and sliced into meat gravy. Serve them often as a substitute for both dessert and bread.

Sweet Potatoes "Southern Style"

Boil and peel potatoes; brush them over with syrup diluted with water; brown in oven or under blazer of gas stove.

Candied Yams

Slice boiled potatoes into a baking pan; sprinkle each layer with sugar, cinnamon and bits of butter; add a few cloves and a half cup of hot water; brown in the oven. Sugar may be omitted and a tablespoon of white syrup added to the hot water. This rich dish usually accompanies the Sunday chicken in the South. In the tropics plantains or bananas, cooked in somewhat the same style, are served with chicken.

Creamed Sweet Potatoes

Boil the potatoes; mash until smooth with butter, milk and a teaspoon of syrup; season with cinnamon and brown in the oven.

Squash in Ramekins

For this dish use pumpkin, hubbard squash or crookneck squash. Boil, drain and mash smooth, add butter lemon juice, cinnamon, and a little syrup; bake in ramekins or baking pan. Pass ramekins hot from the oven after the plates have been served.

New dishes are treasure finds, so treat your people to these sweets that travelers find good—the family table deserves the best. Serve these dishes in the approved way—that is, serve them hot with meat. Omit dessert and let them represent real sugar economy, even if a little sugar has been used in their preparation.

CLEAN UP THE CORNERS

Take a look around and get in the left-overs. There are still pumpkins and squashes tucked away, melons to be preserved or pickled. Brine or can them if you are too busy to make them up now.

What of the late tomatoes? Ripe or green, they can be put away for winter or eaten now. What better stretcher for that expensive bacon than fried tomatoes? Ripe tomatoes may be canned, dried, made into paste, marmalade or pickles. Green tomatoes may be brined whole for winter dishes or sliced and brined for pickles or made into marmalade. Save them all.

Sorghum is particularly good in the butters and relishes below, but any other syrup may be used in making them, or a combination of sugar and syrup.

Green Tomato Marmalade

Two pounds tomatoes, two teaspoons ginger root, one and a half cups sorghum, two lemons cut thin.

Cut large green tomatoes in cubes, crush ginger and place in cheesecloth bag. Add sugar and lemon. Cook slowly without stirring until ingredients are tender and mixture is thick. Seal while hot.

Green Tomato Mincemeat

Two quarts green tomatoes, one and a half cups sorghum, one pound seeded raisins, one-fourth cup citron, one and a half pounds chopped apples, three-fourths cup chopped suet, one tablespoon salt, one cup cider vinegar, two teaspoons cinnamon, one teaspoon cloves, one teaspoon nutmeg.

Chop tomatoes or run through meat grinder using coarse blades, and drain off juice. Cover with cold water and let it come to a boil. Scald for half an hour and then drain thoroughly. Repeat until the tomatoes have been boiled three times. Add all ingredients except spices, stir well together and cook until thick. When cold add spices and stir thoroughly. Heat and seal in glass jars.

Tomato Butter

Ten pounds ripe tomatoes, six cups sorghum, three pounds apples, three cups vinegar, half ounce stick cinnamon, fourth ounce whole cloves, half ounce ginger, fourth ounce mace.

Tie spices in a bag and boil all ingredients together about three hours or until thick, stirring frequently. Remove spice bag and seal.

Tomato Carrot Relish

One cup ground carrot, two cups ripe tomatoes, one cup sorghum, one teaspoon ground horseradish, one teaspoon ginger, one teaspoon vinegar, one lemon sliced thin.

Cook carrot until tender, add tomatoes peeled and sliced and other ingredients. Cook slowly until mixture is thick. Pack in hot jars and sterilize.

Pumpkin Butter

One gallon cooked mashed pumpkin, one quart or less sorghum, one gallon boiled cider, spices to taste.

Boil about two hours and stir constantly, or cook in stove until proper consistency. Seal while hot.

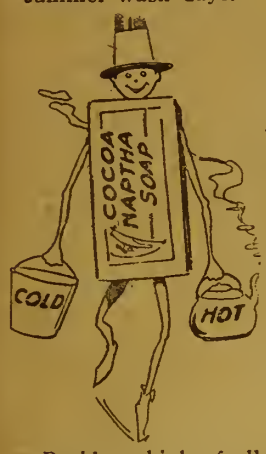
Lives there a man with ear so sprung
Who never to himself hath sung:
"K-K-K-Katy, beautiful Katy, etc.?"

Let our object be, our country, our whole country, and nothing but our country.—Webster.

FOR HOT OR COLD WATER

The Wash Day Problem Is Solved.

You know how inconvenient it is sometimes to keep a sufficient supply of hot water for wash day—and also how extra hot it always seems on summer wash days.



Don't worry. Now you can use cold water just as effectively as hot—and get just as good results.

Beside, think of all the fuel you save—and you don't need to boil the clothes at all!

Thousands of housewives are finding that Cocoa Naptha Soap is a real friend, especially in war time when every nickel counts. It's a great big cake, containing pure cocoanut oil, made by Los Angeles Soap Co., and just suited to the waters of this section. Ask your dealer for Cocoa Naptha. Give it a fair trial.

Genuine comfort if you ask for and get—

Mayer Martha Washington Comfort Shoes

Beware of Imitations— name and trade-mark stamped on the sole.

F. Mayer Boot & Shoe Company
Milwaukee, Wis.

MILWAUKEE Mayer CUSTOM MADE HONORBILT

37 DIFFERENT STYLES

Don't Pay Retail Prices
Buy Direct From Manufacturer

Our Xmas. Special:

Genuine Spanish Leather....$24.75
Spanish Leather Cloth.....$17.50

Chair or Rocker
Send for Price List.

Boston Bedding Co.
2100 Maple Ave. Los Angeles

GREEN PICKLED OLIVES

By F. T. Bioletti

The green pickled olives of commerce usually known as "Queen" olives are prepared by a fermentation process. This fermentation produces lactic acid which gives them their peculiar piquancy and helps to preserve them. Experiments have shown that pickles practically identical in character and quality with the imported Queen olives can be produced in California from the Sevillano and Mission varieties. The Manzanillo can be prepared successfully in the same way.

Other experiments have shown that this pickling process can be applied successfully to ripe olives, at least to the Ascolano.

It has been shown also that ripe olives pickled in the ordinary way can be given the piquant quality by a supplementary fermentation.

The olives are picked after they have reached good size but before they show any sign of coloring, either red or yellow.

They are placed in a two per cent lye (two and one-half ounces of lye per gallon of water) and left until the lye reaches the pit. The lye is then replaced by lye changed twice daily until all taste of lye has disappeared.

They are then placed in seven per cent brine (nine ounces of salt per gallon of water).

All these operations should be carried out with as little exposure to the air as possible.

The olives are kept in the brine in closed receptacles at ordinary room temperatures until fermentation has developed the characteristic flavor and acidity. This will require from three weeks to several months, according to the temperature and the amount of flavor desired.

When the fermentation has reached the desired point, the brine is taken off, strained or filtered and boiled. The olives are rinsed quickly with water and then covered with the hot brine. They may be kept in barrels or preserving jars without further treatment.

If intended for shipment or to be kept for a long time, they may be placed in glass preserving jars or lacquered cans. These are then filled with the boiling brine, sealed and heated to 212 degrees Fahrenheit for about 20 minutes.

WISE BOY GOES BACK TO SCHOOL

I guess every fellow has a spell of thinking that going to school is a waste of time. I know I had two or three spells, but I always managed to recover. One thing that helped me was a statement made one day by the hired man who worked on my dad's farm. I had said something about school being a waste of time. The hired man looked me straight in the eye and said: "When I was just a little bit older than you, I was offered a job at a dollar a day. I quit school and went to work. That was 20 years ago—and I'm a dollar a day man yet," says The Case Scout in September Boys' Life.

Not very many boys will make a foolish move if they get the straight dope on a proposition, and if any of you are really figuring on quitting school, here's a little test I would advise you to try. Make a list of a dozen men in your neighborhood who you know have gone at least through high school. Then ask each one of these men this question: "Are you sorry you went through school?" When you have finished with this list make another of a dozen men who you know have never gone to school at all or who dropped out before they finished the eighth grade. Then ask each one of these men this question: "Are you glad you didn't get an education?" Keep track of the answers you get and then do a little serious thinking.

CARTOONISTS ARE ELOQUENT

A cartoon by a French artist has the puzzled kaiser looking down with a scowl upon the fields of France over which swarm innumerable masses of infantry and artillery under the flag of the United States.

"What ships brought all these soldiers?" he demanded of his companion.

"The Lusitania, your majesty," was the reply.—New York Advocate.

YOU PAY-USE-LESS
CALUMET BAKING POWDER
has proved in millions of bake-day tests that it is the best baking powder ever made. No baking powder of anywhere near the same quality is sold at such a low price.
You use less Calumet—because it *is* the highest grade baking powder. One teaspoonful is equal to *two* teaspoonfuls of most other brands.
And there is no "*luck*" about it *when* you use Calumet. No loss. It is absolutely sure. It is the most economical of all. Millions of housewives use it—and so do leading domestic science teachers and cooking experts.
You save when you buy it—You save when you use it
Calumet contains only such ingredients as have been approved officially by the U. S. Food Authorities. It is used in the Army and Navy.
HIGHEST QUALITY AWARDS
BAKING POWDER
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BAKING POWDER
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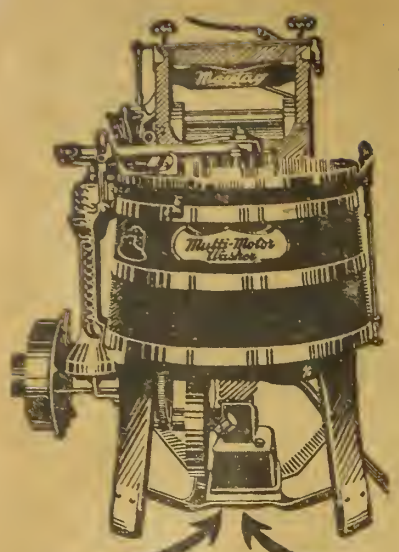
GET BEST RESULTS WITHOUT LOSS

Portable-economical
Perfection Oil Heater is easily carried—up stairs or down, from this room to that—anywhere heat is needed.
Lights at the touch of a match—gives instant heat. No smoke or odor.
Steady, comfortable warmth for many hours on one filling with Pearl Oil, the ever-obtainable fuel.
Cuts fuel bills, for less furnace heat and fewer grate and coal-stove fires are required. Oil consumed only when heat is needed—no waste.
Buy Perfection Oil Heater today. Dealers everywhere.
STANDARD OIL COMPANY (California)
HEAT WITH PEARL OIL
PERFECTION OIL HEATER



See That Engine

It is positively the only successful engine of its kind on the market—it operates on gasoline, —about 5c worth does the wash—it is the principle exclusive feature of

The Maytag Multi-Motor Washer

This washer will not injure the daintiest linens or the most delicate laces and it will handle the heaviest blankets—doing the work twice as well and in less than half the time required by the old fashioned washer or back-breaking, knuckle-skinning wash board and tub.

Come in and see this wonderful new labor-saver- it has many exclusive patented features that no other washing machine can have

Write for Name of Dealer in Your Territory

Woodill & Hulse Elect. Co.

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Los Angeles

NORWALK TIRES

Here's a tread that's "tougher than a pig's nose." The tread has from two to three times the tensile strength of ordinary casings and the mileage service has always kept at the highest pitch.

Factory Distributor:

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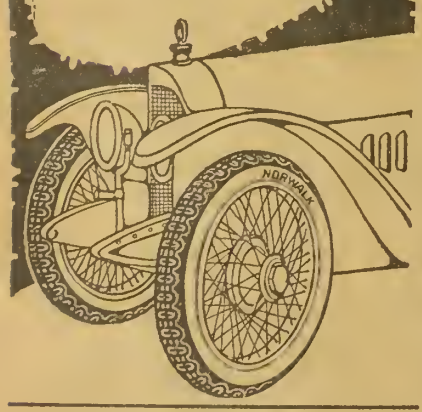
Los Angeles
San Francisco Fresno



Los Angeles Poultry Show postponed one week to avoid conflict with poultry exhibit at Liberty Fair. New dates, December 17-22.

Los Angeles Market

Los Angeles, Dec. 4, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.
Cal. Extra Creamery 60

CHEESE

Brokers' prices:
California fresh, lb. 31

EGGS

Exchange quotations. Price to retailers 2 to 3 cents higher.
Fresh extras 75
Case Count 70
Pullets 67

LIVESTOCK

The quality of cattle reaching the Los Angeles market is showing a slackening, consequently the prices are somewhat lower but the killers would pay more if they could get the better sorts.

The percentage of good cows reaching the market is increasing and market for all cows is firm.

There is a better tone to the hog market and receipts are equal to the demand. With the killing gangs recovering from the flu packers will be able to handle more hogs. The bulk has been selling at $16.50.

Good lambs remain firm while the medium sorts are barely steady at prices quoted. In other words a premium is being paid for quality. Ewes are poor property. Wethers are fully steady and in good demand.

Report of live stock conditions on the Los Angeles market as compiled by the United States Department of Agriculture, Bureau of Markets, through the local office:

Good Steers .....12.00@13.00
Medium Steers .....11.00@11.50
Common .....9.50@10.50
Good Cows .....8.50@9.50
Medium Cows .....7.00@8.00
Common and canners .....5.50@6.50
No. 1 hogs, 150-200 lbs.....16.00@16.50

Prices quoted below are for carload shipments. Driven-in, or truck hogs sell for ½ cent less:

Hogs—
No. 1 hogs, 150-200 lbs. .....16.00@16.50
No. 2 hogs, 2.50-350 lbs. .....15.50@15.75
Sheep—
Lambs, 65-80 lbs. .....15.00@16.00
Wethers .....11.00@11.50
Ewes .....7.00@8.50

POTATOES

Wholesale selling prices:
Burbanks .....2.40@2.75
Sweet, lug .....70@75
Inyo Whites 2.00

ONIONS

Wholesale selling price, cwt.
Australian Brown, lug .....1.75@2.00
White Globe, cwt. .....4.00@4.25

VEGETABLES

Wholesale prices:
Beans—String .....8@9
Limas, lb. .....6@7
Cabbage, cr. .....1.25@1.50
Carrots, doz. 40
Cauliflower, cabbage cr. .....2.00@2.75
Celery, cr. .....3.00@4.50
Egg Plant, lb. 5½
Lettuce, cabbage cr. .....1.00@1.15
Parsley, doz. 15
Peppers, Chill, lb., 5@5½; Bell, lug.75@85
Pumpkins, lb. best .....1@1½
Rhubarb, bx., Crimson, ...75
Strawberry .....90@1.00
Radish, doz. .....15@20
Spinach, doz. 30
Squash—Hubbard, best, lb. 2
Tomatoes, unwrapped, ripe lug...75@1.15
Turnips, doz. .....35@40

FRUITS

Apples—Bellfleurs, bx. .....1.50@1.85
Yucaipa Delicious .....2.75@2.85
Pearmains .....1.75@3.00
Newtons .....1.65@1.75
Cranberries, Ore., Wash.,
1-3 bbl. bx. 4.00
Grapes—Homegrowns, best per pound,
Grapes—Cornichons, 7@8; Malagas, 12; Red Emperor, 8@8½.
Pears—Bartletts, storage lb., 8; D'Anjou lb., 7@8; Kiefer, lb., 5; Winter Nellis, lb., 6@7.
Persimmons, lb. .....4@8½
Quinces, lug. .....85@1.25

CITRUS

Oranges — Off bloom Navels packed 3.00@4.00; Tulare County Navels medium to large size fancy, 5.50@6.00. Off bloom Valencias small, 3.00@3.50. Smith's Early, loose 8c lb.

Lemons: Fy. packed 3.50@4.00 bx.; loose, 1.50@2.00.

HONEY

Cash to producer on farm:
Supplies very light, very few sales. Extracted, lb.: White, supplies practically exhausted, too few sales to establish a market; Light Amber, Sage and Alfalfa 21½@22 lb.; Beeswax, 36@37 lb.

BEANS

Price to retailer, cwt.:
Pinks .....7.50@8.00
Tepary 5.00
Lima 11.50
Large White 10.00
Small White 10.50
Blackeyes 6.25
Garbanzos 11.00
Lentils 25.00
Kidney 12.00
Cranberries 11.25
Horse beans 8.50

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

No. 1 Tame Oat .....26.00@28.00
No. 2 Tame Oat .....23.00@25.00
No. 1 Barley 22.00
No. 2 Barley .....19.00@21.00
No. 1 Alfalfa 20.00
No. 2 Alfalfa .....17.00@19.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS

Prices offered on exchange. For federal price see San Francisco market:
No. 1 Bright Feed Barley 2.32½
No. 3 Yellow Corn, bulk 3.15
No. 3 Mixed Corn, bulk 3.05
Feterita 2.60
Milo Maize, local 2.57½

San Francisco Markets

San Francisco, Dec. 3, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapped, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:
Extras 63

CHEESE

Dairy Exchange quotations:
Cal. Flats 32
Ore. Triplets 35
Jack, full cream 30

EGGS

Dairy Exchange quotations:
Extras 81½
Selected Pullets 81½

POULTRY

We quote to producers, lb.:
Hens, 33@35; Broilers, 45@48; Fryers, 40; Old Roosters, 20@22; Young Roosters, 34@36.
Belgian hares, live, 20@22.
Jack Rabbits, doz. 3.25@3.75.
Squabs .....3.50@4.00
Turkeys, dr., 36@42; live 32@35.

LIVESTOCK

Prices gross weight:

Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.

Steers, lb., 11@13; thin, 9½@10; cows and heifers, 8@9½; thin, 6@6½; calves, 10½@11½.

Sheep — Lb. gross weight: Wethers, 11½@12; ewes, 9@9¼; lambs, yearlings, 12@12½; milk, 14@14½.

Hogs—Hard grain fed, weighing 100 to 150 lbs., 16; 150 to 300 lbs., 16½; 300 to 400 lbs., 15¾.

POTATOES

Wholesale selling prices at wharf, cwt.:
Choice deltas, 1.60@1.75; fy., 1.75@2.00; Red Shima, 2.50 for extra fy. stock; Oregon Burbanks, 1.75@2.25; Gems, 2.00@2.25; British Queens, 1.75@1.85; sweets, lb., 2½@3.

ONIONS

Wholesale selling price on wharf, cwt.:
Australian, Brown and Yellow.1.15@1.50

VEGETABLES

Wholesale selling price:
Artichokes, doz. .....35@1.10
Beans, String, lb., 10@15; Limas.....8@9
Brussels Sprouts, lb. .....5@6
Cabbage, lb 3¼
Carrots, sk. .....1.00@1.25
Cauliflower, doz. .....75@1.00
Celery, doz. .....30@50
Cucumbers, hothouse, bx. of 30.2.00@2.75
Lettuce, doz. .....20@35
Southern Iced, cr. .....1.50@1.75
Peppers, Bell, lb., 7@8; Chill .....4@5
Egg Plant, lb. .....5@6
Mushrooms, pkg .....50@1.00
Peas .....14@15
Pumpkins, sk. .....75@1.00
Spinach, lb. .....3½@4
Rhubarb, bx. .....1.25@1.50
Squash—Cream .....90@1.00
Hubbard, sk. .....1.25@1.50
Winter, sk. 1.00
Tomatoes, lug .....1.00@1.50
Turnips, sk. .....75@1.25

FRESH FRUITS

Apples—Newton Pippins .....1.35@1.65
Newton Pippins .....1.25@1.65
Pearmain .....1.25@1.65
Lady Apples, bx. .....2.50@2.75
Avocados, doz. .....6.00@7.00
Bananas, lb. .....8@9
Grapes, cr. .....1.00@1.35
Olives, lb. .....8@12½
Pears—Beurre Hardy 1.50
Kieffer, ½ bx. .....2.25@2.50
Winter Nellis .....2.00@3.00
Persimmons, bx. .....1.00@1.50

CITRUS

Lemons bx. fy., 4.00@6.00; lemonettes, 2.50@4.00; grapefruit, 2.00@3.00; Limes,

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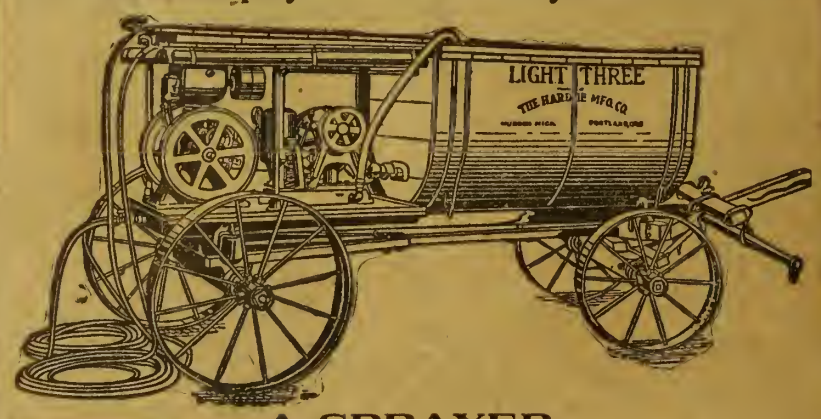
Reference Any Bank Anywhere.

The Hardie Sprayers Are Always In The Lead



A SPRAYER

Is a MIGHTY IMPORTANT piece of machinery in a valuable fruit orchard. orchard.

You will find the HARDIE SPRAYERS the most efficient, the most dependable, and will last longer with less upkeep than other power sprayers.

No sprayer made can give you better service. No money can buy a better one. You can pay more for some sprayers, but you can't get more.

Why not consult your nearest HARDIE dealer or write for the big spray catalog and learn why we can offer you more spray pump value than others.

The HARDIE ORCHARD GUN is now $12.00; none better, satisfactory or your money refunded.

The Hardie Manufacturing Company

Store House: 200 N. Los Angeles St. Office: 1023 Leighton Ave.
Los Angeles, Cal.

-a new pump circular

—for prospective Pump Users

Gives interesting information about *LAYNE & BOWLER*

PUMPS

Ask for Circular No. 30

Layne & Bowler Corporation

900 Santa Fe Ave. Los Angeles

150 half box; Mandarins, 1.50@1.75; Navels, 3.00@6.50.

HONEY

Cash to producers, country loading points:

Extracted, Water White, supplies very light, 22@23½; White Sage, supplies very light, 20@23, Light Amber, supplies very light, 18@20½; Dark Amber, 18@19 lb.; Beeswax, supplies moderate, 35@40 lb.

GRAIN

Wheat—Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per. Bushel	Per Cental
No. 1	$2.20	$3.62 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	$2.18	$3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	$2.16	$3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 ½

For sacked grain add 9 cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.

Barley—Feed, 2.10@2.17½ per cental for choice spot; shipping, 2.20@2.25; milling, 2.25@2.30.

Oats—Red feed, 2.40@2.60 per cental; seed, do, 2.85@3.00, white recleaned at 3.15@3.20.

Corn — Egyptian, 2.75@3.00 per cental for choice white; Milo, 2.70@2.75.

HAY

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.

Fancy Wheat Hay (light 5 wire bales)	27.00@29.00
No. 1 Wheat or Wheat and Oat Hay	25.00@27.00
No. 2 Wheat or Wheat and Oat Hay	19.00@23.00
Choice Tame Oat Hay	24.00@26.50
Other Tame Oat Hay	19.00@22.00
Wild Oat Hay	19.00@21.00
Barley Hay	19.00@21.00
Alfalfa	17.00@21.00
Stock Hay (in order)	17.00@20.00
No. 1 Barley Straw, bale	50@80

Damaged hay (all kinds), according to condition.

Citrus Fruit Market

Los Angeles, Calif., Dec. 4, 1918.

New crop Navels are going in fair quantities to the Eastern markets, bringing prices ranging from $3.50 to $6.25. The demand for them is steady. The few Valencias yet being offered are bringing good prices though not the spectacular prices of a few weeks ago. The highest price reported on the New York market on Tuesday was $10.45.

Lemons are still meeting big sale. Eighteen carloads sold in New York on Monday from $2.35 to $4.15. All distributing centers are taking them freely at about the same as the New York prices.

Shipments

Shipments of citrus fruits from Southern California to date since November 1, 1918: oranges, 128 cars, lemons 594, total 722. To same date last season; oranges 1802, lemons 290, total 2092. From Central California to date; oranges 1103, lemons 126, total 1229. To same date last season; oranges 440, lemons 31, total 471. From Northern California to date; oranges 51, last year same date 29.

CATTLEMEN'S MEETING

A meetlng of the cattlemen of Los Angeles, San Bernardino and Orange Counties will be held at the Food Products Buildlng, Liberty Fair Grounds, Los Angeles, on Saturday, December 7, at 10:00 o'clock a. m.

This meeting is called at the request of the secretary of the California Cattlemen's Association and the Local Counties Association. The purpose of the meeting is to form an association which is to be a branch of the state association. The principal matters to come before the meeting will be the acceptance of by-laws, election of officers and appointment of delegates to represent us at the zone meeting.

LEGAL QUERIES

Continued from Page 585

of both parties, or an offer and distinct acceptance; the fact that a party receives property of another may render him liable to pay for the reasonable market value, not for any percentage; but the fact that one in conversation with someone who happens to be in the brokerage business, picks up information which might be valuable hardly would render him liable to pay the broker either morally or legally; if the broker wishes to charge for such information there should be a distinct written agreement, and it would seem that that would be the only method whereby the broker could recover. There are also several statutes which provide that such contracts should be in writing. These apply to different states of facts, however, and are known as "The Statutes of Frauds".

RUMELY
OILPULL
TRACTOR
LA PORTE IND.
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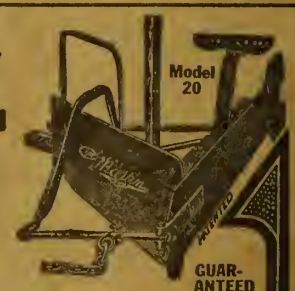

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and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — December 14, 1918 — Nov. 24

California Marvel, Champion Shorthorn Steer at Chicago

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877
Combined with California Cultivator 1914.
Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916.

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Saturday, Dec. 14, 1918

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THIS WEEK'S COVER

It is customary to reserve our cover as a sort of place of honor, and such being the case and desiring to pay proper tribute to California Marvel, the pure bred Shorthorn steer that was bred, fed and shown to a championship at the great International Live Stock Show, by the University of California, we cheerfully grant him the cover. California Marvel has done much toward putting California to the front; we can do no less.

COMMUNITY COUNCILS

One of the real lessons taught by the war was the power of organized effort. The war was won through organization.

Now comes the Council of National Defense, backed by President Wilson, with a plan for the establishment of community councils for the purpose of efficiently meeting the problems of peace.

According to the State Council of Defense these councils will be formed "not only with the idea of service during the readjustment period, but also with the intention that they will live and function to the betterment of their respective communities during the time of prosperity now apparently assured.

"These community councils will be thoroughly democratic; their membership will be extended to every man, woman and child, and they will be organized along the broadest possible lines. They will include all the advantages of community centers and farm bureaus, giving the fullest opportunity for community expression and initiative."

The President calls the move one of "vital significance," and says that when thoroughly carried out it will, in his opinion, "result in welding the nation together as no nation of great size has ever been welded before."

Great possibilities lie within the plan. When a community works and thinks together, the individuals come to understand each other, and with understanding will come a sense of fairness that will help us over many of the rough stretches in the road ahead.

A COAST STOCK YARD?

Several of the daily papers have carried stories regarding the probable establishment of a stock yard in Los Angeles. The plan is said to be sponsored by the Farm Bureau Marketing Association, operating in the San Joaquin Valley.

There is little question but that an improved marketing system for live stock is the most vital need of California producers. But that very fact would seem to argue that great care should be exercised. A satisfactory market can not be brought into existence over night and in the light of the experience of older sections it might be well to "look before we leap."

And besides, it begins to appear that possibly the government has accumulated some valuable information regarding the operation of live stock markets and may have arrived at some conclusions that will prove workable. At any rate Secretary Houston, in his report, just received, recommends to Congress "that some form of supervision over the packing industry" be established.

If the proposed plan will meet the needs in a satisfactory way, well and good. We are for it, but we would urge great caution. Why not bring the matter before all the live stock organizations of the state?

ABOUT A FEED LAW

Secretary Houston, in his annual report, recommends a federal feed law, under which the government could proceed in a uniform manner and protect the buying public against misbranded and adulterated feeds entering into interstate shipment.

Assuming that such a law is possible, it will be necessary to have our own law to protect consumers against crooked manufacturers in this state not doing an interstate business.

A bill providing such protection will come before the legislature this winter, and its passage is assured if the live stock interests of California will give it the support necessary. It is a foregone conclusion that the crooked manufacturer and dealer will be on hand to fight it, but if every producer interested, and all should be, will write or see his representative and senator and explain the need of the protection the bill will become a law.

THE 1919 WHEAT CROP

We have recently received a number of inquiries as to whether or not the price for the 1919 crop of wheat has been fixed.

The president's proclamation of September 2, 1918, establishing guaranteed prices for the 1919 wheat crop applies to wheat harvested in the United States during 1919 and offered for sale before June 1, 1920. As in the case of the 1918 crop the wheat must be offered for sale "to such agent or employe of the United States or other person as may be hereafter designated" at any one of the principal primary markets. Up to the present date, however, the agency by which the 1919 wheat crop is to be purchased has not been designated.

Thus, although the guarantee for the 1919 wheat crop will continue until June 1, 1920, there is no present assurance it will be purchased or handled by the food administration grain corporation.

BRED IN CALIFORNIA

Another champion steer from California! And our sheep and hogs did well too. The list of winnings made by the University live stock makes most interesting reading, but it seems to us that the most important fact regarding the showing is the fact that every animal was bred in California.

Two years ago the same institution demonstrated that this state could produce as good cattle and sheep as any section, and now added proof is furnished that California producers can grow as good pork as the corn belt.

With these facts in mind, is it too much to expect that in the future this state will take its place as one of the really great live stock states? We think not—but if we can produce as good live stock as any state, should not our producers be provided with as good markets as other sections enjoy?

THE LIBERTY FAIR

During the past ten days the California Liberty Fair was open to the public. In every respect the fair came up to expectations—even to the light attendance.

The many buildings were filled to overflowing with splendid exhibits. Only the live stock department suffered materially on account of the many postponements.

Probably there will be a large deficit when the books are checked. But to one who watched the interested visitors, heard their many questions and their expressed plans for the future, there can be no other feeling than that the enterprise paid.

And the men responsible for the initial show know what a power, for better agriculture in Southern California, the institution can be made. And they are determined that the Los Angeles Fair will be a permanent fixture.

KILL THE VARMINTS

An English farmer has been fined 20 pounds sterling for allowing rats and mice to partially destroy 12 stacks of oats and barley. The importance of food to the world's welfare is such that its ownership lies not only in the man who produced it or the man who purchased it, but the entire public is concerned in the preservation and proper distribution of that food. Californians have appreciated this point and the economic necessity of preserving its food once it is produced and have made many a campaign against squirrels and other rodents. It is criminal to passively permit farm waste of food and feed products.

WHY NOT?

A movement is on throughout Southern California to encourage all firms and individuals to give War Savings Stamps as Christmas and holiday gifts instead of money. A wide adoption of this suggestion will put California over the top in her War Savings quota.

HIGH PRICES AND AVERAGES

Nearly all the different breeds of live stock have registered record breaking prices. The public has become accustomed to sensational sales and reported prices running into four, five and even six figures excite slight interest. Many of the high sales are undoubtedly genuine and a basis can be found for justifying them; others are so palpably out of line that they are read with fingers crossed and an amused smile.

Generally speaking such sales, while not disturbing to the rank and file of the breeders, often tend to discourage the man who is thinking of getting into the live stock business, and in the end usually act as a boomerang to the particular breed. At such times it is well to bear in mind that the real condition of the market is disclosed in the general sale averages for the breed. If one takes the trouble to investigate the situation it will be found that, notwithstanding the many high prices, the general average of values placed by the buying public is no higher for pure bred live stock than are present prices in practically all other lines of trade, and that such average values as have been placed on breeding stock are based on a solid foundation, namely, a world food shortage, particularly of meat supplies, that will require a good many years after the war to supply.

Five-figure prices make good news, but safety lies in averages.

STILL MORE TO DO

During the past year and a half the farmers of the United States have been told that the destiny of the world depended very largely upon their efforts. That they measured up to the responsibility is one of the great facts of the war. From the moment that appeal for increased production was flashed from Washington the farmer stripped for action and met every demand. Largely, very largely, through his efforts the world was saved from autocracy—and now he is being told that largely — very largely — through his efforts will the world be saved from anarchy.

We find it difficult to subscribe to the opinion that the world is likely to be submerged in anarchy—there are too many sane, level headed people for that — but it is a fact that a hungry man is hard to handle, and because we want to see the peace of the world restored quickly and completely there is little doubt but that the farmer will answer just as effectively this new call.

This thought does intrude: After saving the world from autocracy and heading it away from anarchy, will not the farmer be privileged to ask for a squarer deal than he has been drawing in the past?

Orange growers of the Lindsay district Tulare County are rushing their fruit to market. So much fruit was brought in that the trucks had to stand in line, sometimes for hours at a time to make deliveries, an expensive proposition for some of the growers who were paying $2.50 an hour for large trucks.

Out of 38 stands of bees Dave Larson of Stevinson, Merced County, sold two and one-half tons of honey at 20 cents per pound, besides increasing the number of stands to 100. This has been a very good year in this locality; the bees can feed early in the spring on willow blossoms.

Rice harvesting has been completed at Dos Palos, Merced County.

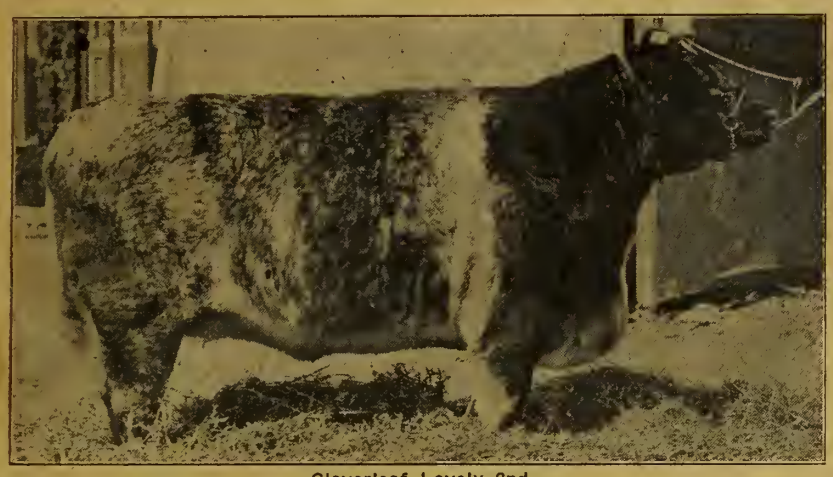
The Liberty Fair Live Stock Show

Written for California Cultivator by R. P. Royce

TO PROPERLY tell the story of the Liberty Fair live stock show it would be necessary to go back several years, to the time when a few men who looked into the future realized that Southern California was not only adapted to live stock but needed live stock in the scheme of future development. It would then be necessary to tell of the struggle a few men had to make the community realize the value such a show would be. Then the actual organization of the Liberty Fair, the appointment of C. R. Thomas, the man responsible for the American Royal Live Stock Show, as manager; the year of work, ending with every foot of stall and pen room in the attractive new plant spoken for; then the postponement; the flu; the repeated postponements; the wind storm that destroyed the part of the horse stalls and the judging arenas; the loss of entries; the real opening; and the rain! Quite enough to discourage an older fair, not to mention a rather shaky new venture, but it just happened that in the bright lexicon of the men behind the Liberty Fair no one ever took the trouble to look for the word fail. Consequently the fair became a fact, and even though it suffered some, and lost about 40 per cent of the original entries, a start was made. That is the essential point—a start was made, and if one was interested in speculating as to the probable trend of development he would undoubtedly find a wide field of possibilities opening up.

Every one connected with the live stock department is certain that the fair will become a permanent fixture, and, such being the case, the influence the institution will have on the future development of Southern California will be impossible to estimate. The live stock industry in this state is developing rapidly and all who are familiar with the situation feel that it is just on the eve of events of tremendous importance.

The outstanding feature of the fair was the live stock show and the outstanding feature of the live stock division was the show of beef cattle and hogs.



Cloverleaf Lovely 2nd

Senior and grand champion Shorthorn cow. Owned by the Maxwell-Miller Company.

No California show has ever attracted cattle from a wider territory. Cattle from as far east as Missouri, and north into Washington and Canada, competed with some of the best that California has, and while the visitors were successful in getting away with the most coveted placings it was not always clear sailing, and by the time the judging was completed they knew they had been to a cattle show.

A number of the Eastern exhibitors found ready sale for some of their top animals and at prices quite satisfactory. California cattlemen are no longer satisfied with $150 bulls—they want the better kind and are willing to pay the price.

Princely Stamp

Senior and grand champion Shorthorn bull. Owned by the Maxwell-Miller Company, Steamboat Springs, Colorado.

The swine show was strictly a local show — all California hogs — and, for the most part, from the vicinity of Los Angeles. During the show one of the exhibitors sold nearly $10,000 worth of breeding animals, and there were numerous sales at excellent prices.

Generally speaking, the show was quite above expectations, but before next year's show several improvements will be needed for the convenience of the exhibitors and visitors.

The greatest need is for a suitable judging arena. It was first planned to judge the cattle under a tent provided with several tier of seats, but the wind storm that destroyed the large tent covering part of the horse stalls, also destroyed the judging tent and the cattle were forced to show in the open. No satisfactory place was provided for showing horses, so they were shown on one of the main roads of the grounds, which had to be crossed by the crowds going to the stalls. The swine were shown in a tent, but the spectators had no seats.

But for an initial effort the show was a success, everyone was good natured and inclined to overlook any minor inconveniences.

Manager C. R. Thomas is to be congratulated for the successful staging of an event that is destined to be a powerful aid in the improvement of the live stock industry of this state.

Shorthorns

The show of Shorthorns was not the largest, in point of numbers, that has been held in this state, but few California shows have brought together a more attractive lot of cattle than passed before B. C. Cowan, former secretary of the American Shorthorn Breeders' Association, for judgment.

The rating of the various classes by this veteran Shorthorn authority met with little criticism from the ringside, but in several instances a considerable difference of opinion was noted. Judge Cowan worked over his classes carefully, and two points that he insisted on were quality and well covered shoulders.

Diamond Choice, the aged bull heading the T. T. Miller herd, was the only entry in class. This bull, a son of Diamond Goods, was presented in pleasing form—very smooth, and nicely covered. Viewed from the front, there is little to criticise, but he hardly carries his width aft and down into his quarters to the extent one would like.

Five two year old bulls made up what the judge considered the most difficult class. The short-aged Maxwell-Miller bull, Princely Stamp, of remarkable character and style, seemed to attract the judge from the moment he entered the ring and, while not shown to advantage, he was never moved from first place, and kept going until he was made senior and grand champion. This bull has developed exceedingly well since the Fresno show but still lacks widening out and deepening to overcome his appearance of being too upstanding. If he acquires the needed width and depth and still retains his other features he will be a bull to watch.

Really the ringside favorite was the white Greendale Sultan, shown by T. T. Miller. A different type of bull from the winner, reminding one of his famous sire, Lespedeza Sultan—very wide and deep and thick, lacking somewhat in smoothness, perhaps, but a good bull. The judge faulted him for a bareness of shoulder and set him down to third place, below the roan Village Flash bull, Hallwood Flash, shown by the Dibblee Estate, smoother in his covering, perhaps, but not so thick. Standing in fourth was Pacheco Lad 92nd, shown by the Pacheco Cattle Co., a smooth bull, not especially thick, and with somewhat less attractive head than Cumberland Goods from the Henn herd. Quite a few felt that the last bull could have stood higher and not looked out of place.

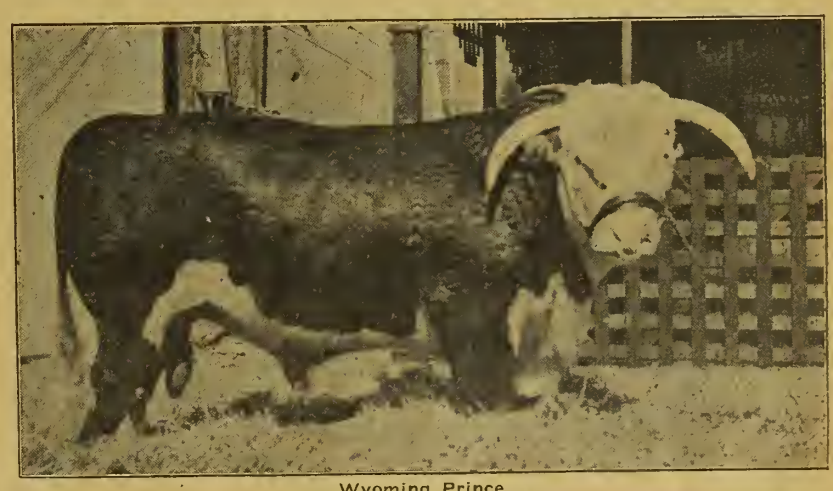
Miss Rialto 2nd

Junior and grand champion female, shown by the Hereford Corporation, of Wyoming.

The two senior yearlings did not make an especially attractive class. In the junior yearling class, Pacheco Marshall, virtually a senior calf, who stood first at Sacramento, had a rather easy time landing ahead of the T. T. Miller entry, that in turn had little trouble keeping ahead of the two Colorado calves.

The junior champion was uncover-

Continued on Page 606



Wyoming Prince

Two year old bull that headed the first prize aged herd, shown by the Hereford Corporation of Wyoming.

Agricultural News Notes of the Pacific Coast

Northern California

O. W. Jarvis has been appointed farm adviser of Sacramento County.

A farm bureau center has been formed at Camptonville, Yuba County.

Plans are being made to have an El Dorado County Pear Show in 1919.

The state tractor school began sessions at Chico, Butte County, February 10.

Farm Advisor Lee of Alameda County reports that there will be 5000 more members.

A large number of feeder stock has been brought in to the Oroville district from the mountains.

The purchasing and marketing departments of the Humboldt County farm bureau have been merged.

Farm Adviser Sweet of Butte County has been giving demonstration of fruit tree pruning in Sutter County.

Farm advisor of Alameda County reports that there will bee 5000 more acres planted to wheat this year than last.

It is proposed to bring under irrigation 2500 acres of red land in South Thermalito, the water to be supplied from Lake Almanor.

Modoc County farmers have joined in making a shipment of wool to government purchasers at Boston. The average price is 57 cents.

Farm Adviser Harrison of Yuba County reports purchase of a large number of pure bred bulls and boars by farmers in that county.

The Butte County farm bureau is planning to carry on experiments in a number of orchards to help solve the problem of controlling June drop of oranges.

The campaign to advertise the recreational possibilities of the El Dorado national forest will be taken up again. This advertising was dropped because of the war.

Pruning demonstrations have been held in various sections of Sutter County during the latter part of November. Others will be arranged for during the present month.

The semi-annual meeting of the Amador-El Dorado Livestock Association, which was scheduled to be held at Jackson, Amador County, has been postponed on account of the epidemic of influenza.

Rice fields which have not yet been harvested are suffering very severe damage from ducks. As the feeding grounds become smaller the ducks are concentrating on the rice that is left in the field.

Dean Hunt of the college of agriculture of the state university has returned from a visit to England and France as a member of a commission appointed by the president to study agricultural conditions there.

Farm bureau meetings will be resumed in Napa County. The following schedule will be observed for December: Union District, 16; Tucker, 17; Mt. Veeder, 18; Lodi, 20; Soda Canyon, 21; Chiles Valley, 24; Pope Valley, 27; Mt. George, 28.

The ending of the war has brought up the price of hops. A sale was reported from Santa Rosa last week of 2190 bales for 26 cents a pound. Hops two months ago were offered at two cents a pound without buyers. European demand accounts for the increased price.

Central California

The State Farmers Union is in session at Modesto.

Public schools of Santa Cruz County opened last Monday.

The Ceres farm bureau center held a fig conference December 6 and 7.

The State Farmers' Union convention is being held at Modesto this week.

The Santa Cruz County farm bureau has taken up the good roads campaign.

By use of a salt solution it has been found possible to separate fermented prunes from the good stock.

Turlock reports warehouses full and running over with barley and beans, being held for a better market.

At Hanford on December 19 a fig institute will be held. Prof. I. J. Condit of the state university will be in charge.

The government has announced that it will not fix price on beans, will not commandeer any beans and will hereafter make its purchases in the open market at market prices.

The Turlock district of Stanislaus County practically closed its shipping season for green fruits and vegetables the last of November. During the season 3562 carloads of produce were sent out.

A number of suits have been filed in Fresno County by raisin growers against picking contractors who failed to pick grapes within agreed time, with result that the fruit was damaged by rains.

Fruit growers of Santa Clara County are making serious investigation of the possibilities of drying their fruit so as forstall possibilities of loss such as they suffered from unseasonable rains this year.

Vine pruning demonstrations will be given in Kings County on December 16 and 17 by Prof. F. Flossfeder of the state university. Places where demonstrations are to be given are to be announced later.

The central labor camps established in grape growing districts the past season have proved entirely satisfactory in the solving of the labor problem. The same plan will probably be followed in the future.

The "Stanislaus plan" for financing farmers was explained by Secretary Bowles of the state council of defense to the Tulare County division. No action has yet been taken but it is assumed some move will soon be made to try it out.

There will be local meetings of the Stanislaus County farm bureau at Denair, December 9; Mitchell, 10; Thalheim, 11; Tegner, 13; Wood Colony, 16; Hickman, 18; Fair View, 20; Orange Blossom, 21; Claus, 23; Ceres, 26; Patterson, 27.

Horticultural Commissioner Colins of Tulare County has been aiding in the gathering of orange maturity data which will be presented to the state convention of county commissioners held in Sacramento in an effort to arrive at some more equable maturity test.

An Oakdale, Stanislaus County, correspondent gives as a reason for the recent increase in milk prices the fact that owing to the influenza epidemic their families and their helpers were down with the disease and many cows were turned out in pastures without milking.

Southern California

The first car of Redlands navels went out December 4.

A carload of cotton was shipped out of Coachella Valley last week.

Freak bloom has appeared on some of the walnut trees in Ventura County.

Imperial Valley shipped out 355,000 pounds of turkeys for the Thanksgiving market.

The San Dimas marmalade factory expects to employ 600 people for a six months' run.

The San Dimas Orange Growers' Association held its annual meeting last Saturday.

Orange County has 150 acres planted to avocados.

The Arlington district expects to ship out 25 carloads of navels for the Christmas trade.

Mentone olive growers report an average price of $210 per ton, prices going as high as $300.

Courses in the rolling tractor school will begin at Brawley December 16, lasting for two weeks.

Tomato growers of Imperial Valley are setting out their plants which will bring the spring crop.

The Pomona Valley Cannery is preparing to ship overseas for government use 1500 cans of tomatoes.

In the week before Thanksgiving turkey buyers from San Francisco to San Diego were busy in the Imperial Valley.

Orange growers of the Rialto district are studying up the possibilities of growing vegetables along with their citrus fruits.

The wind storm the last of November did considerable damage to beans in Santa Barbara County. Walnut groves also suffered somewhat.

The December meeting of the Tustin farm bureau was postponed because of the influenza epidemic. The next one will be held January 3.

The Sheep and Wool Growers' Association of Imperial Valley has been organized with O. N. Shaw, president and L. C. Main of Holtville, treasurer.

Twenty thousand bags of beans have just been turned into the pool of the Lima Bean Growers' Association by independent Orange County growers.

Much Lima bean straw is going into the citrus orchards as fertilizer since the cancellation of the food administration order reserving it for stock feed.

Farm Adviser Bahmeier of San Bernardino County has been appointed director of development work on the state farm colony near Durham, Butte County.

Instead of the former seven day schedule to Chicago, Redlands orange packers say that it takes under present conditions fully 12 days to put Redlands fruit on that market.

The Brawley News reports shipments from that station on one day last week of nine cars of hogs, nine of milo, three cars of sheep, three cars of fertilizer, one car of horses and one car of calves.

G. E. Gordon, who was for several months assistant farm adviser of Riverside County, has been transferred to the Los Angeles County office. His position in Riverside will be taken by R. E. Nebelus.

The Coast and General

Oregon reports a slightly bette market for dried beans.

Skagit County, Washington has jus harvested a good crop of potatoes.

The Farmers' National Congres was held at Jacksonville, Florida December 2 to 6.

Hood River apple growers are dis cussing proposed federal ruling t govern box grading.

John D. Ryan, director of the ai service has resigned, as has Fuel Ad ministrator Garfield.

The Northwest Fruit Growers' Con ference held at Spokane last week had a big attendance.

The American Poultry Associatio held its annual meeting at Jackson ville, Florida, December 3 to 4.

Wheat smut is reported exceeding ly serious in northern Idaho, on ranch showing 97 per cent of th wheat infected.

The annual meeting of the Nationa Grange at Syracuse, New York, las week formulated a protest against th zone postal rate.

The quartermaster's division of th United States army has secured suf ficient provisions of potatoes an onions for winter use.

The Wenatchee apple district o Washington has already shipped ou as much fruit as was estimated fo the total output, and there are 150 more cars yet to go.

Florida's shipment of oranges i 2000 carloads more than last year t this date but a little under the 191 shipment. Grapefruit shipments thi year are more than double the recor year of 1916.

The Northwest Live Stock Sho has been called off owing to the in fluenza epidemic. The Pacific Inter national at Portland has also beer called off with the exception of th fat stock show, which will be held.

Frank Meredith, secretary of th Washington state fair, has $14,96 with which to begin financing the 191 fair. Cash receipts of the state fai this year amounted to $35,510. The 1917 legislature made an appropria tion of $58,000 for fair work.

Federal suggestion that appl grades be lowered for the remainde of the pack is being opposed by deal ers in the Northwest. The questio will be thoroughly gone into at th coming Spokane convention. The new rules provide that ten per cent of th grade and five per cent of the culls may enter into the fancy pack.

Commercial crops valued at $40 000,000 have been produced since th first of the present year on lands irri gated by the government in region which were formerly the domains o jack rabbits and sage brush in th Yakima Valley, according to estimate made by R. K. Tiffany, project man ager in Yakima for the United State reclamation service.

A report from Astoria states tha the cranberry crop for this season i estimated at approximately 15,000 bar rels. This includes all of the cran berries grown on both sides of th Columbia River at its mouth. The crop is fully three times that of the previous season, and the quality of the fruit grown this year compares most favorably, as the fruit is of much larger size and better color.

A City Rest Room for Country Women

Written for California Cultivator by M. E. Bemis

IN THE history of every growing town in the center of a prosperous farming community, there comes a time when it has outgrown the short dresses of the country village and is primping and putting on the airs of the coyish young town. It is at this period that the farmer's wife, when she comes to town and puts the baby up on the counter to amuse himself with the cat and the fly paper, with a stick of candy for a baton, and then goes over to the dry goods department and lets the baby amuse himself with the thread and notions, gets frowned upon. Then it happens that all farmers' wives are apt to be looked upon with suspicion, or imagine that they are, which is all the same, and straightway a feeling grows among the farmer folk that the town merchants don't care for the trade of the country people. The breach widens and the mail order houses get the benefit.

It has been a long time ago since Phoenix, Arizona, was a country village, but some of the after effects of the "coming out" period lingered for long years after Phoenix was listed among the cities. The old hitching posts around the court house and the city hall were removed, and paved streets and fancy lighting standards came to mark the progress of the town. Modern department stores came as a matter of course with their elevators, floor walkers and smartly groomed clerks that catered to the wants and fancies of the well dressed town lady and were icily polite to the tired, dusty farmer's wife.

Maybe you never had to get up and get breakfast for four hired men, feed the chickens, churn, get the children ready for school, get lunch set out for "hubby" to put on the table at twelve, and then drive with the baby seven miles to town to do the necessary shopping. Well, if you are a woman and haven't, you are lucky, for some women do these things and when they arrive in town they are more or less dusty, just a little tired and somewhat cross. Wouldn't it be fine if there were some place where she could brush up a little, bathe her face and hands, and perhaps put the baby to bed?

Some of the stores had rest rooms, but these were generally occupied by well dressed women, and—well, somehow the tired mother from the country didn't feel just at home, and so for years Phoenix kept growing more and more metropolitan and the mail order catalogues came in literally by the carload.

Along in the early days of statehood the town had a wise mayor who sized up the general condition and told the city fathers that if they wanted the trade of the farmers they must look after the needs of the farmer and his family. "Build a rest room for the women of the country so that when they come to town they will find one place where they can feel at home and can make themselves presentable before going to shop," said the wise mayor. But the business men said "No!" Some of the merchants said, "We have rest rooms, and if these are not big enough, we can enlarge them."

Nothing was done then, but good ideas have a way of rolling around and finally getting in the way where people can't help but fall over them. So it happened that a year or so after the wise mayor had gone back to private citizenship the District Federation of Women's Clubs met and appointed a committee to make an investigation as to the feasibility of putting up a building in Phoenix for the benefit of country women when they came to town to trade.

This committee reported favorably and urged the city commission (the town had just adopted the commission form of government) to appropriate money for the purpose. There was still a good deal of opposition, but finally it was decided to go ahead, and the city engineer's office was instructed to draw the plans. The building was erected on the southeast corner of the city hall block. It is appropriately arranged and is architecturally pleasing.

There is a comfortable reception room with desk and chairs. Here too is the parcel room where bundles may be left to be called for or sent in from the stores. The main rest room opens off the reception room. Here are tables with the latest magazines, a branch of the public library, couches and comfortable chairs. In the basement is a kitchenette, dressing room and nursery.

Was it a success!

Ask those who come and find real rest and can go out and shop without that discomfort that comes from conscious dust and dishevelment.

Reading Room in Municipal Rest Room.

Ask the casual visitors from other towns who see the country women come and go away with pleasant looks and resolve to go back to their own home town and build rest cottages.

Ask the merchants if it has helped to make a better feeling between the country and the town people, ask them if it has increased their trade.

Ask the mail order houses, ask the babies—oh, pshaw, what's the use, one wouldn't and the other couldn't tell you, but here is what we will do, we will let the matron tell us what she thinks. She says:

"The room has proved its worth in the community and the merchants now feel that this building is one of the best advertisemtnts Phoenix has ever had.

"But now we have outgrown our quarters, and were we to build again, I am sure our structure would be three times as large, unless, indeed, it were the plan to construct several such places in different sections of the city. If possible we would have a playroom for the children, apart from the rest room, which requires quiet. And our plans would include an attendant to care for the children. The kitchenette would have all the built-in features, dividing the cupboard into pigeonholes, so arranged that each woman can leave her small belongings from day to day as she sees fit.

"This accommodation has been taken advantage of by many, and our small quarters are often overcrowded during the hours between eleven and two. Parcels are sent direct from the stores to the rest room, to accumulate during the day and to be called for by the owner when she is ready to leave the city. It is a regular meeting place for friends. It has been made a general information bureau and a free employment agency. Advertising cards are left by dressmakers, canvassers, nurses, housekeepers, etc. We also conduct an "Exchange" where women bring their handiwork to be sold without commission, the funds to buy the much desired thrift stamp or to represent a payment on a Liberty Bond.

The following testimonials voice the appreciation of the people and are copies from the "Guest Book" in which visitors register at their pleasure:

"Meeting a real need in the life of the city for the country woman, the business girl and the transient in town!"

"A few moments spent in the cool, refreshing atmosphere of the municipal rest room is a treat to the shopper and visitor in Phoenix, and she leaves feeling proud of this acquisition to the comforts of this city."

"This place is really the most popular 'club' in town."

"Without a doubt the rest room is the wisest thing in the city for the comfort of those who want to stop somewhere for a short time to rest, write a letter, or read."

"The homelike atmosphere, combined with the splendid conveniences of the place, forms a rest room that Phoenix may well be proud of."

We might go on indefinitely with the many praises sounded in its behalf but will let these suffice to prove its many ways of serving the public.

This account of the Phoenix municipal rest room would not be complete without something more than a passing reference to its matron, Mrs. I. R. Abbott, who has done so much to make the venture a success. Mrs. Abbott opened the doors to the public in the fall of 1916 and has been its matron ever since. A smile and a pleasant word greets each visitor, and cheered by her hearty "Come again," many a shy woman from the country is made to feel that the city is not so cold and unfeeling as it seemed before. The popularity of the rest room is due in no small degree to the efforts of Mrs. Abbott to make every visitor feel at home.

Pruning Old Orange Trees

Written for California Cultivator by J. B. Neff

THE object in the early years of an orange orchard is to grow strong trees which will carry large crops without damage to the trees and to do this within a reasonable time. After the tree is grown the object is to have it produce good crops of profitable sized oranges.

We will assume that the planting has been of good trees and well done, the proper tillage care given and that the trees have reached the age of 15 to 20 years. It is often found that an orchard at this age does not produce so large a percentage of fine fruit as when younger. This may come from various causes, such as planting too many trees to the acre, insufficient water at times, need of fertilizers or need of pruning along with other causes.

Pruning is as necessary to success in growing oranges as with other fruits and if altogether neglected the crop will be disappointing though other care has been given. Oranges which bring the highest prices do not grow on trees which have small leaves and slender twigs, neither do young and abnormally vigorous trees have smooth fruit, hence we must have the medium, and this can be brought about by judicious pruning. If we take a tree having small leaves and small twigs we find it will bloom profusely but that too many of the blossoms will fall and that the remaining small fruits will drop badly until but a light crop is left and these are of small sizes. By pruning out sufficient of the old growth the new wood will be larger and the leaves will grow larger, which in turn will produce larger and better fruit. It is difficult to give detailed instructions as to the amount taken out as each tree requires treatment in some manner different from its neighbor, but observation of the trees in the orchard will soon teach the grower to take out the proper amount to produce the desired sizes.

The pruning of Valencia orange trees is often neglected because there are always oranges on the trees and the grower dislikes to take any off without selling them, so the pruning is limited to the dead branches while the pruning should be such as to keep the branches from dying. Pruning of navel orange trees should be done as soon as the fruit is gathered, while Valencia orange trees should be pruned in May or early in June when the fruit which is cut off in pruning can be sold. This fruit should be removed from the cut branches at once and placed in boxes until sufficient is gathered to take to the packing house.

The openings made by pruning should not be large as sucker growth will form in such spaces. This growth will need much watching and pinching of tips to prevent unduly long branches which do not produce fruit. If large branches must come out use a sharp fine-toothed saw. Cut close to the body or main branch so the wound will heal quickly, and cover with mineral paint.

(Mr. Neff will give next week a second paper on pruning old orange trees.—Edit.)

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Walnut Pruning

Written for California Cultivator By J. B. Neff

SINCE the season just passing has been very profitable to the walnut grower it should prove an incentive to the adoption of better methods and better care of the orchards. The one thing that has been neglected in walnut growing probably more than any other is the consistent and regular pruning of the trees. Trees that have not had much pruning in their early years are apt to be brushy and filled with dead branches. The growth is also likely to be short, with possibly too many fruit spurs which are not vigorous and consequently produce small walnuts. A mistake is made in simply cutting out the dead wood as the pruning should be with a view of cutting out enough to prevent the choking of the branches which causes their death. It is good practice to go through the orchard just before the nuts are ripe and mark all the branches which have dropped so as to be in the way of the team. This marking can be done by tying strips of muslin where the cuts are to be made, and many surprises will be found after the nuts have been gathered as frequently a branch which has been in the way has lifted until it may be eight feet from the ground. However this should come out as it will be lower in the coming years. After these troublesome branches have been taken off the general pruning should begin. Enough branches should be taken out to allow the sunlight to get through and make shadows on the ground instead of a solid shade when the tree is in full leaf, and also to promote a more vigorous growth since large walnuts grow only on strong wood.

Do not head back at any time but go back a few feet and take out all of the branches as it is not practical to thin out each particular branch to its end. Many trees could have at least one-half of their present wood taken out with benefit to the tree and profit to the owner. It is well also to thin out on the side away from the wind as that is usually thickest and tends to draw the tree out of plumb and expose the trunk to sunburn. The large cuts should be protected by a thick paint, preferably a mineral paint. The bleeding of the cuts will do no harm.

Reclaiming Land

Written for California Cultivator By H. Culbertson

WHERE there is water enough to grow alfalfa the following method has worked remarkably well. Red granite soil near the foothills that had been in grain until a half ton of hay was a good average crop was made to produce eight tons of alfalfa to the acre. The land was sowed to alfalfa in the spring. The following winter a carload of stable manure was put on each acre. It was harrowed over eight or ten times and a hay rake was used to get off the material that would rake up with the hay. This produced a covering on the surface with the leaves that fell from the alfalfa; the soil was covered with a mulch for three years. Each of the two following years 800 pounds of bone meal was applied. This produced a growth of alfalfa that had to be cut rather early to prevent lodging. The cows did not object to the early harvesting. It is so uncommon to see a good field of alfalfa in a foothill section that this field was a special point of observation. The object of the treatment was not growing alfalfa, but a condition that would grow strawberries. The

result was the largest berries and the most of them the first year that the writer has ever seen. Had not a strawberry disease come into the community there would have been great results the second and third years. The field has been showing fine results in other crops.

This would not be complete without some reference to the physical condition of the soil at the time it was plowed for the berries. The condition of such soils before treatment is that when a good rain comes it runs together in a compact mass, dries out quickly and gets almost as hard as a traveled road. After the above treatment there was an opposite condition. The soil was what cultivators call a live soil. In the complete preparation of the soil there was considerable tramping by the team, but it did not pack. Another piece of land near this in the same condition as this was before treatment had to be reworked on account of its packing. Looking up reports as to the probable bacterial condition it was found that an alfalfa field under above conditions contained over three million to the cubic centimeter. Reducing it to cubic inches there was between forty and fifty millions. This number of living organisms in one cubic inch ought to make a live soil. One of the conditions for the large development of soil bacteria is a surface with a covering as the above had and frequent irrigation. All this is important when it is considered that the number of bacteria in the soil is indicative of the amount of crop it will produce.

NEW PLANT QUARANTINE REGULATIONS

A quarantine further restricting importations of nursery stock and other plants and seeds into the United States as a protection against the introduction of insect pests and plant diseases, has been signed by the secretary of agriculture. The order will become effective on June 1, 1919.

Under its terms, fruits, vegetables, cereals, and other plant products imported for medicinal, food or manufacturing purposes, and field, vegetable, and flower seeds, may be imported without permit or other restrictions. Other classes of plants for propagation permitted entry, including certain bulbs, rose stocks, fruit stocks, cuttings and scions, and seeds of fruit, forest and other ornamental and shade trees, and of hardy perennial ornamental shrubs, may be imported only in accordance with the permit and other requirements of the regulations. The entry of these classes of plants is represented by experts to be essential to the floriculture and horticulture of this country under existing conditions.

DOES CYANIDE DAMAGE FRUIT TREES

Killing scale insects by placing cyanid of potassium under the bark of fruit trees has been stated to cause the death of the tree. Accordingly Metcalf (Science XLVII, No. 1214, 1918) conducted experiments along these lines on scale infested apple and pear trees. In each of six trees, half-inch holes were bored, filled with chemically pure potassium cyanid, and then plugged. Four of the trees apparently were followed by a dying condition, but during the summer began to recover. All of the trees became free of scale and have continued healthy and vigorous for the past three years.

The effectiveness of the cyanid treatment utilized as an insecticide in this manner, however, remains doubtful, as during the same season the scale disappeared from adjoining trees which while infested were untreated.

A NEW CONTACT INSECTICIDE

Through the combining of nicotine and oleic acid, a new contact insecticide termed "nicotine oleate" has been produced. It is soluble in soft water and forms a soapy solution that may be used to emulsify an animal, vegetable, or mineral oil.

In certain tests two and one-half quarts of a 40 per cent nicotine solution were combined with one and three-quarters quarts of commercial oleic acid to make one and one-quarter gallons of "nicotine oleate."

This is said to be more effective against aphids than a spray of free nicotine, and costs only about one-half to prepare.

It should not be used on plants that are to be eaten such as lettuce, kale or spinach, as the "oleate" feature prevents the spray from volatilizing.

On dormant fruit trees, its use with a non-volatile oil, such as linseed, cottonseed, or fish oil should make it valuable for the destruction of eggs of insects and some scale.

APPLE VALUES AND STANDARDIZATION

Apple values are well maintained throughout the various marketing points and strong prices are ruling for barrel and box stock at this time.

While it is not possible with any degree of accuracy to show in dollars and cents just how much this prosperous condition is influenced by the law of supply and demand, it is a known fact that the present large demand and ruling high prices for California stock are due in a great measure to the stipulations and enforcement of the apple standardization law, which constitutes a part of the activities of the state horticultural commission.

For labeling packed apples "California Fancy" which were not up to legal standard, a Watsonville packer was fined $100.

PEAR BLIGHT AND THRIPS

In the Rogue River Valley of Oregon, County Pathologist C. C. Cate is directing a campaign against pear blight by spraying against the thrips which are considered most active in disseminating pear blight. The spray used is nicotine sulphate 1-800 and distillate-oil emulsion one and one-half per cent. It is time to spray for thrips.

BRAWLEY TRACTOR SCHOOL

A tractor training center at Brawley from December 16 to January 18 under the direction of the state board of education and the local high school will give instruction in the gas engine and gas driven farm machinery to promote efficiency in crop production in the valley. The demonstration classes will meet in a garage on the main street for three weeks and the fourth week will be used to do field work in plowing and preparing land for planting. Indications are that the classes, both day and night, will be crowded.

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The La Crosse Tractor offers you 12-24 horsepower for **1150** —full three plow capacity, with guaranteed drawbar pull of 2000 pounds and 24 belt horsepower. It is famous the country over as the tractor with "most power for the money".

Now is not a bit too soon to see the La Crosse dealer near you and have him place your order for Spring delivery. Write us today for his name, as well as that of the district distributor, who will make arrangements for you to see the next outdoor demonstration.

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Pear Blight

FROM "Blight, the Pear Grower's Nightmare," by A. L. Wisker, we quote:

Bees, flics, and some other insects euter the flowcrs; aphids puncture the delicate bark on the tips of new shoots with their beaks, and some other insects inoculate these tender parts of the tree by simply gripping them with their claw-like feet. Climbing cutworms, beetles, grasshoppers, and ground squirrels eat through the protective outer bark and inoculate the cambium layer. A blighted limb rubbing against a healthy limb through action of the wind will break the bark and produce blight in the healthy branch. The implements of tillage, tearing through blighted roots, may inoculate healthy roots close at hand. Similar results may follow where singletrees or parts of harness strike a diseased tree and shortly thereafter break the bark on a healthy tree. One case has been reported in which a leading orchardist of the Sacramento Valley lost several hundred trees less than two years old as a result of flood water coming in contact with them for several days,, the water having first passed through an old orchard in which blight was most active. His theory is that the diseased sap, containing millions of germs, was washed off the old trees and carried into bark cracks or wounds on the young trees by the water.

Aside from those agencies that distribute blight at blossom time, the worst agent of distribution is the ignorant pruner, who does not realize that he is dealing with a disease as infectious and as deadly to many varieties of the pear as is blood poison to human beings. The methods of the surgeon in the operating room should be the pruner's guide, since the diseased part of the tree must be cut off so far below any sign of infection as to insure the removal of all diseased tissue. Dependent upon the activity of the disease, the growing condition of the tree, the time of year, and the danger to the tree should re-infection occur, it will be necessary to cut from a few inches to as much as two feet below the point where the last sign of infection is visible.

Development of the Disease

After infection during the growing season, blight in the pear may develop so as to be recognizable within a few days or it may not become evident for as much as six weeks. With blossom infection, from two to three weeks will probably be the usual term. The newly formed fruit and new twig growth begins to darken, wilts, shrivels, dies, dries up, and finally turns black, the leaves frequently adhering to the dead wood during the winter following. Before turning back the fruit sometimes appears as if covered with a downy, grayish mold, and may appear to sweat tiny drops of moisture. This is the exudate arising from the fermentation of the diseased sap, frequently having a milky color, syrupy consistency, sicky-sweet taste, and peculiar, fermenting odor. Given off by the diseased wood, the exudate often shows as good-sized drops and the fluid may exude so copiously as to run down the branches for a considerable distance. At first the exudation is teeming with the bacilli of the disease, and if bark wounds or growth cracks are encountered new infections occur. As fast as the sun dries up the exudate the germs die, heat and dryness being fatal. Direct exposure to bright sunshine for ten minutes is usually fatal, but if a large limb is cut off and allowed to lie in the sun the germs in the inner bark will remain alive so long as there is a substantial quantity of moisture remaining.

The appearance of the exudate in bead-like drops is an infallible sign by which blight may be recognized, but it is not always in evidence in the early stages of blight. Another means of identification is the discoloration of the cambium layer, which, under the disease, shades from light pink through several shades of red and reddish brown to a dingy, water soaked color, this last appearing as the wood is killed. In the apple, the pink or red color is not always noticeable.

Surgical Methods Only Control

No injections, sprays, medication, or applications of chemicals have any value in blight control after infection starts. Once within the tree, blight either dries up and dies, unaffected by any exterior application, or it runs its course uninterruptedly until the roots are reached and the tree is killed. The latter is the usual result with most varieties if the trees are thrifty and vigorous, unless the disease is properly cut out.

In cutting out blight the antiseptic methods of the operating room must be followed, or there is great danger of re-infecting the tree or spreading the disease to others. After each cut the tools used must be sterilized, and the best practice demands that the cut surface be similarly treated.

Until recently, bichloride of mercury solutions were considered infallible as disinfectants when used at a strength of one to one thousand. Recent experiments by Professor F. C. Reimer, of Talent, Oregon, in charge of the Southern Oregon experiment station, cast grave doubts upon this belief. During the summer of 1918 Professor Reimer painted the surface of fresh cuts on pear trees with a virulent culture of blight germs and immediately applied to the different trees used in the tests various alleged disinfectants, including carbolic acid and bichloride of mercury, standard strength. In September, 1918, I saw the trees. Treated with either solution, every tree had developed blight, to such an extent that it was past saving. The results were the same where most of the other disinfectants were used, but where cyanide of mercury crystals were dissolved in water, strength one to five hundred, the solution kept in a glass or earthenware jar and applied with a paint brush, not one case of blight developed!

Even though experiments cover but the one season, the results are so satisfactory that it appears safe to discard all other disinfectants in favor of cyanide of mercury, particularly since the unreliability of bichloride of mercury is so well proven. The new distinfectant should only be used in the strength given until further experiments are made. It burns in greater strength and may not control in weaker solutions. One ounce, costing about a dollar, will make about sixteen quarts of the solution.

Cultural Methods

Pear blight control is rendered much more effective if cultural methods are employed that tend to check too exuberant growth, since the wood tissues under rank growth infect more readily and are favorable to rapid extension of the disease. At the same time, repressive cultural practices, carried to such an extreme as to re-

tard growth to a degree that greatly reduced the yield, failed to prevent severe blight injury to Bartlett trees in a few cases in an experiment made by Loma Rica Nursery at Grass Valley, during the summer of 1918. In this experiment nearly all infections died out without extending more than twelve inches, and the progress of the disease was very noticeably slowed down.

Any given variety of the pear varies in its susceptibility to blight in different localities and under different climatic and cultural conditions, but the relative tendency to blight of all varieties is consistently retained under all conditions. Such varieties as Seckel, Anjou, Nelis, and Comice are always more blight resistant than Bartlett, Howell, Bosc, or Dana Hovey when subject to the same conditions. In some resistant sorts, such as Comice, while infection does not readily occur, great injury is apt to result if blight does fasten itself upon the tree. When Anjou and Nelis are infected, the progress of the malady is apt to be slow and injury is frequently negligible.

At this time the search for blight proof species and varieties has failed to produce a single one, and those found to be most strongly blight resistant generally have fruit of such poor quality as to have no commercial value. However, there is a tempting field of adventure open to the plant breeder, since it is logical to believe that hybrids will in time be produced, possessing both quality and blight resistance in the highest degree.

Varietal Resistance

All the most highly resistant species have come from China and Japan, where blight is unknown. Several of these Oriental species are decidedly resistant, and there are cultivated varieties of these species exhibiting similar resistance and some having high quality. There are other pear species in the Orient as blight susceptible as the wild pear of Europe, pyrus communis of the botanists or "French seedling" of the nurserymen, the ancestor of all our best pears.

There is no species more susceptible to blight than pyrus communis, and the blight problem is rendered most difficult because all our best pears belong to this species. Many nurseries still use it in seedling form as the stock or root upon which to bud the desirable varieties. Up to a few years since, this was the practice in California, but in 1913 the writer set in motion propaganda favoring the use of the so-called Jap seedling—pyrus serotina—as a root stock, this being a species reasonably resistant to blight. The result may be judged from the fact that when Dr. W. L. Howard, of the University of California, in 1917 completed an investigation of the seedling situation, so far as it concerned the use of different stocks by the nurserymen of the state, he found that 63 per cent of the pear stocks used were pyrus serotina. California nurserymen are nothing if not progressive, and the percentage at this time probably stands close to 90 percent. Thus has the practice of two generations been completely changed within a few years.

EL DORADO PEAR SHOW

There is talk of reviving the custom of holding a pear show in El Dorado County. The last was held in 1913. Those who are urging the holding of the show say that El Dorado's pears can sweep the boards at any show and that the show should be an advertising feature of much value.

Apples for the English Market

Shipments of apples from the Watsinville district this year are running well up to last year's although the season this year started two or three weeks later. According to the Pajaronian:

"There are some 450 cars to move out yet not including about 350 cars held in cold storage. This will make a total of 2073 cars for the season aginst 2040 cars shipped last year.

"The taking off of restrictions on importing apples into England has started some fruit in that direction and several cars of Watsonville apples have started for the trip across the ocean. It has been figured that the freight and handling will cost approximately $3.00 per box to land the fruit in England. The rate from Watsonville to the Atlantic docks is 55 cents, and the latest quotations on the ocean rates was $1.63. This with the handling and wharf charges will approximate $3.00. The greatest drawback to the shipping fruit foreign is that you cannot reserve shipping space. Ships clearing for England will load "spot" cargoes when they have the space, but no shipper can be absolutely sure of the ship or the time that he can get his apples across.

"This makes the element of chance cut a figure in the exporting of fruits and other perishable goods at this time.

"The average price for the fruit in England is said to be 12 cents a pound and with the apples netting about 44 pounds to the box it would bring the price around $5.00 a box. With the freight charges deducted the shipper would receive about $2.00 per box for his fruit if he had the good luck to connect with a ship and get his product across promptly."

FERTILIZER BUYERS CAN SAVE CAR SPACE

Farmers' organizations and fertilizer dealers are urged by the United States department of agriculture to combine orders for fertilizers so as to permit maximum car loading. The average carload of fertilizers in 1917 was 20 tons a car. It is estimated that with the average increased to 50 tons a car the saving will approximate 192,000 freight cars and 24,384,000 car-miles.

Farmers' cooperative buying associations are urged to combine sufficient orders to guarantee maximum loads, and farmers buying individually can help by making their needs known early in the season in order that dealers may order in maximum carload shipments.

PISTACHIO NUTS

Regarding their recent shipments of pistachio nuts Tribble Brothers of Sacramento County write: "I believe we have the honor of growing the first commercial crop of pistachio nuts in the United States. We have about 150 pounds and they are pronounced as good as or better than the best imported varieties both in color and quality. The meat averages about 47 per cent in proportion to weight of shell, which is much heavier than the imported varieties, these imported nuts averaging 33 per cent."

PRUNE SYRUP

Experiments are being made in the manufacture of syrup from prunes not of first class appearance and quality. With our grape syrup, our prune syrup —not to mention sorghum—we will soon be able to cultivate, instead of everlastingly repressing, that sweet tooth.

MOTOR TRUCK AIDS IN FOOD DISTRIBUTION

The motor truck can be made an important factor in facilitating the transportation of perishable farm products. It promises to prove a permanent and valuable adjunct to the railroads.—U. S. Food Administration.

A hog ought not to be blamed for being a hog, but a man ought.

TREES
—with roots such as these
are grown only on our foothill soil and location. Hardy-of selected parentage-well-grown-absolutely reliable-and free from root-knot and diseases common to other localities.
We know we can meet your requirements. Our stock of trees is complete. Submit today a list of your wants for special quotations. Remember, behind each tree is our guarantee.
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"More than a million high class fruit trees per year for California Planters."

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FRESNO, CALIF.

California at Chicago

By R. P. Royce

TWO years ago when the small exhibit of steers and wethers, bred and developed by the animal husbandry division of the University of California, swept the boards at the great International Live Stock Show, held each year at Chicago, the attention of the entire live stock industry was turned toward California. Prior to that year, live stock men gave little thought to California as a possible contender for high honors, but when the final awards were made and California held the two most coveted prizes of the show—not to mention several others—the Eastern men began to ask questions. How was it done without corn? What feed was used? Wasn't it an accident—a fluke? And, could they repeat? The first two questions, and others along the same line, were answered at the time by Professor Gordon H. True; the last two questions have just been answered, and very convincingly, too, by the showing made at the 1918 International. And just to make sure that the East would understand perfectly as to California's possibilities as a live stock section a few hogs were taken along and landed dangerously near the extreme top. The detailed record follows:

Fat Steers

California Marvel, first prize senior yearling and champion Shorthorn steer.

California Knight, sixth prize senior Shorthorn calf.

California Leader, third prize junior yearling Angus steer.

U. C. Jock 3rd, first prize senior Angus calf.

California Grizzly, second prize junior cross-bred calf.

Fat Sheep

Fifth on Shropshire wether lamb.

Third on pen of Southdown lambs.

Fourth on Hampshire yearling wethers.

First on Hampshire wether lamb.

Second on cross-bred yearling wethers.

First on cross-bred wether lambs.

The International Grand Champion Fyvie Knight 2nd

Junior yearling Angus steer, grand champion at the 1918 International Live Stock Exposition, shown by Purdue University. Sold at auction for $2.50 per pound—the record price.

Reading from the left: Tom Clark, George Cram, Aberdeenshire, Scotland; Dean J. H. Skinner, John Clay, veteran commission man; Prof. C. F. Gabbie, J. S. Douglas, the feeder.

Second on pen of cross-bred wether lambs.

Fat Swine

Sixth on Berkshire senior pigs.

Fourth on pen of Berkshire senior pigs.

Second, third and sixth on senior Poland-China pigs.

First on pen of Poland-China senior pigs.

Fifth and sixth on Duroc-Jersey junior pigs.

First, best group of five steers, wethers and barrows, shown by an agricultural college.

Every animal shown was bred and developed at the University farm and, with the exception of the few cross-breds, was a pure bred.

California Marvel, the champion Shorthorn steer, was sired by Sultan Mayflower, a grandson of Whitehall Sultan, the greatest bull that has rendered service in America during the past twenty-five years. His dam is Glenbrook's Marvel, who also descends from the same source. Perhaps no calf dropped in California has been watched with keener interest than has been manifested over this one. The fact that he is out of the same cow that produced the sensational 1916 grand champion, California Favorite, and that he was born just about the time his illustrious half brother made his trip to Chicago—and to fame, served to make him the center of interest among California cattlemen. From the first it appeared that he had the making of a real show steer under his rich coat of hair and as he developed under the skillful handling of Alex McDonald, there was never any reason to change the faith that was centered on him. He was shown but one time in 1917 and that time he was made grand champion at the Pacific International Live Stock Show at Portland. At that time it was felt that he would have been a formidable contender at Chicago and it was regretted that he was not given the opportunity to go East. However, he was groomed for the 1918 show and that the high expectations that rested on him were not misplaced is evidenced by his record.

The senior Angus calf, U. C. Jock 3rd, first in his class at Chicago and reserve champion Angus steer, is also a blood relation to a former champion. The dam of this calf also produced U. C. Jock, the champion Angus and reserve grand champion of 1916. From the above it is quite simple to draw the conclusion that good steers must have good mothers—and that blood will tell.

For the first time California exhibited hogs at the International. It is one thing to fit and ship cattle such a distance, but it is quite another thing to fit and ship hogs. Notwithstanding that fact the hogs attracted a great deal of favorable comment and, in the case of the Poland-China barrows, did remarkably well. As a matter of fact, it was generally thought that the pen of California Polands should have been the champions rather than reserve.

This year's showing is but added proof that California can produce live stock, the equal of any section, and the pioneering carried on by the University is bound to have a far reaching influence and should be given the unstinted support of all.

CATERPILLAR
Reg. U.S. Pat. Off.

DISC PLOWS

As famous for service and durability as the "Caterpillar" Tractor—both products of the same factory—both the result of long experience and a knowledge of the needs of Pacific Coast farmers.

Built originally for use behind the "Caterpillar" Tractor to make a complete plowing outfit without an equal, these plows can be depended upon to give superior service in any kind or condition of soil, with minimum draft and maximum ease of operation.

Besides being built heavier and stronger than most plows offered for tractor work, "Caterpillar" Disc Plows possess other exclusive points of advantage that are worthy of your investigation. It will pay you to send, today, for the "Caterpillar" Disc Plow catalog.

THE HOLT MANUFACTURING CO.
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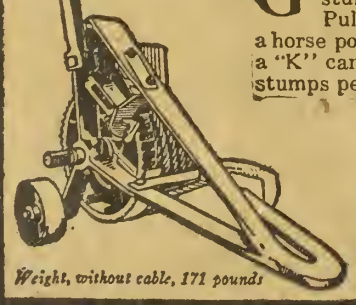
Stop Wasting Money On Your Stump Land
Turn It Into Dollars

GRASP the OPPORTUNITY and put DOLLARS in your pocket by clearing your stump land. Stump land was never so valuable as it is TO-DAY. The "K" Stump Puller will do the work in less time and the least expense. Cost just about ½ of a horse power machine and about ¼ of the cost of dynamite. One man or woman with a "K" can out pull 16 large horses. One person single handed can pull from 50 to 150 stumps per day.

HAND POWER
K Stump Puller



Weight, without cable, 171 pounds

No stump too big for the "K"

works by leverage—same principle as a jack—one man can lift or pull 48 tons alone. Works easy as rowing a boat. Works on hillsides or marshes where horses cannot operate. Has 2 speeds and weighs 171 pounds. Made of the best steel. Absolutely guaranteed against breakage. Endorsed by U. S. Government officials. Highest bank references.

Send for my special offer and free book on Land Clearing

WALTER J. FITZPATRICK Box 17 182 Fifth St., San Francisco, Calif.

Such a splendid record should lend courage to all who are seriously planning either to enter the live stock game or to continue on in the business of producing meat.

We move for a vote of thanks to Professors True, Thompson and Miller—and to Alex McDonald, George Phillips and Homer Stokes, the men responsible for California's record.

NORTHERN CALIFORNIA NOTES

Written for California Cultivator
By W. S. Guilford

IN SPITE of the fact that rains have been followed by drying winds and sunshine, the cost of harvesting rice during the last few weeks has been very high. The heavy clay soil in the rice fields dries out slowly, and before it is in condition to make the operation of binders satisfactory, the rain comes. This makes it necessary to do the best possible under the conditions, and with labor costing from $4.00 to $7.00 or $8.00 and board a day, and everything else in proportion, the expense is enormous. Growers tell of binders cutting from one-quarter of an acre to an acre a day, and many are paying $25 a day for binder outfits, machine, driver and stock. The mud and rice straw form an ideal combination for clogging binder wheels. Binder drivers carry a tool which consists of a rod with a hook on one end and a chisel on the other. With this they endeavor to keep the mud from clogging the wheels, but this is only partly effective. The wheels are frequently clogged so that they will not revolve in the frame. Then it is simply a matter of stopping and digging the mud and straw out with a big pocket knife—a tedious operation. One operator has suggested that this frame which carries the bull wheel should be made wider and longer, giving more clearance to the wheel, but the objection to such a plan is evident, that with such an outfit the time required to "ball up" the wheel would be a little longer—but the time required to "dig out" would be longer.

And when the mud conditions are like this the horses and mules pulling the binder have an awful time. They simply flounder around and "wallow through" the mess. When one bogs down it is necessary to unhitch the team, dig out the animal that is stuck, get more stock and a long chain, pull the binder out and get a new start. By this time it is noon—or night—and no rice has been bound. Most men will not work long under these conditions.

Early maturing varieties, early planting and early and abundant water will make early harvesting possible, and troubles like these can be avoided.

Cultivator readers will learn with regret that influenza followed by pneumonia is responsible for the death of the wife of F. R. Steele, prominent in Berkshire affairs. Other victims are E. M. Downing, manager of the Chico plant of the California Packing Corporation and one of the leaders in the dried fruit business in the Sacramento Valley; Wm. Hagan of Maxwell, one of the most extensive operators in the rice business; and Lindsay Hudson of Willows, an irrigation engineer who had made a large place for himself in the agricultural affairs of the valley.

EL DORADO POTATO STANDARD

The potato committee of the El Dorado County farm bureau has adopted standardization rules and formulated buying and selling agreements.

All shipments must be made in standard 100-pound sacks. Each sack must bear a tag showing classification, grade size and quality of contents.

Potatoes will be classed as choice and fancy. Choice will be divided into two grades—first and second. Firsts must weigh from three ounces up, be free from knobs, and practically free from disease; seconds must weigh from two ounces up, cut, and not too rough.

Fancy will take three grades—special bakers, 12 ounces up; fancy bakers, eight to twelve ounces; medium fancy, three to eight ounces. All stock to be uniform in shape and practically free from disease.

Plans were made for the cooperative buying of all sacks, fertilizers, tags and seed potatoes. By this method it is believed production cost can be reduced materially.

IS NOW A PROFESSOR

Mark Walker has been appointed to the chair of professor of chemistry in the University of Redlands. He will still, however, continue his professional practice at the old location and his clients will be served as carefully and promptly as in the past.

HENDERSON BUSH LIMA

George T. Wilson of Rivera brings to this office a plant of the Henderson Bush Lima which is a wonderful exhibit of the prlificacy of this bean. The plant is little more than 15 inches high with a spread of about 12 inches, but the beans are so thickly set that it is hard to conceive how one more pod could be placed on the bush. He says the field netted over thirty 80-pound sacks to the acre.

SOUTH AFRICA CONSERVES WHEAT

The far reaching effects of war on remote parts of the world may be seen in efforts to safeguard the wheat supply of South Africa. According to the wheat conservation act, recently enacted, standard flour is to contain not less than 75 per cent of the wheat berry, and 83 per cent of standard flour is to be mixed with 17 per cent of meal, barley, rye or other regulation substitute.

This South African ratio is noticeably silimar to the 80-20 plan of wheat conservation enforced here in America and in the Allied countries.

GERMANY'S DRYING RESOURCES

According to German estimates, the use of all drying apparatus in that country would dehydrate about 184,000,000 bushels of potatoes. The German potato harvest, which this year is fairly satisfactory, constitutes one of the principal food resources.

means comfort for the cow and a generous, easy milk flow. BAG BALM, the great healing ointment, will keep the udder free from sores, chaps, cuts, bruises, cracks, bunches and inflammation.

BAG BALM

IS ESPECIALLY EFFECTIVE AT THE CALVING PERIOD WHEN CAKED BAG FREQUENTLY OCCURS.

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Sold by druggists and feed dealers, in big 60c packages. Write for free booklet, "Dairy Wrinkles."

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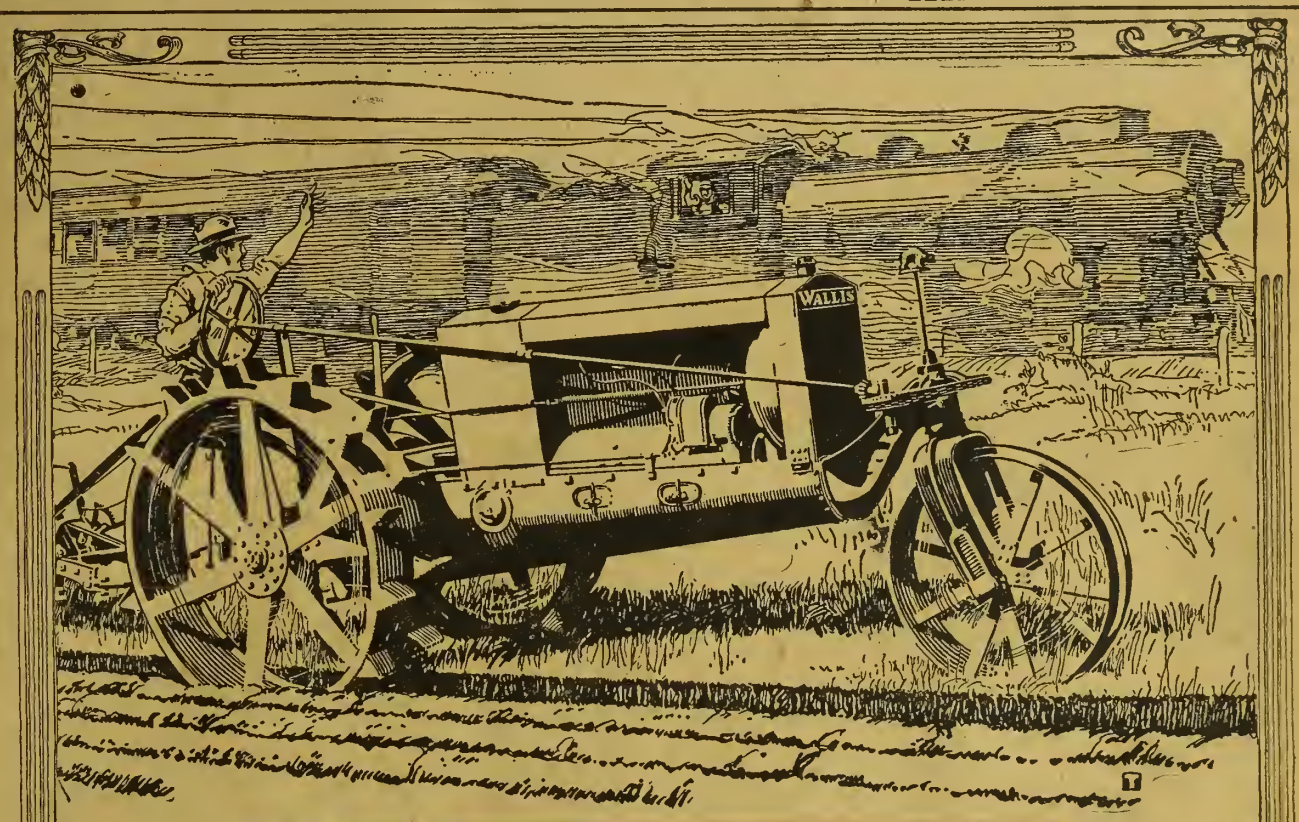

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THE perfection of the Wallis principle in tractor construction established a new standard of tractor quality.

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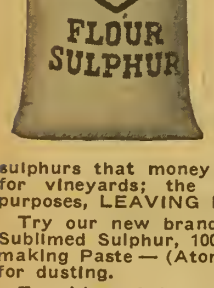

SULPHUR

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards SIX times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of sulphur, also EAGLE Brand, Fleur de Soufre, packed in double sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

Try our new brand of VENTILATED Sublimed Sulphur, 100 per cent pure, for making Paste — (Atomic Sulphur) — and for dusting.

For Lime Sulphur Solution, use our DIAMOND "S" BRAND refined Flour Sulphur. We can furnish you this sulphur at such a low price that it will pay you to mix your own solution.

To create additional available plant food, drill into the soil 100 to 400 pounds per acre of our Diamond "S" Brand Powdered Sulphur. Write direct to

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Shipped commercial dry. Cars average 22 to 24 tons. Saves four-fifths labor in application. Thousands of tons now being shipped to citrus and deciduous growers in California.
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Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Symptoms of Worms

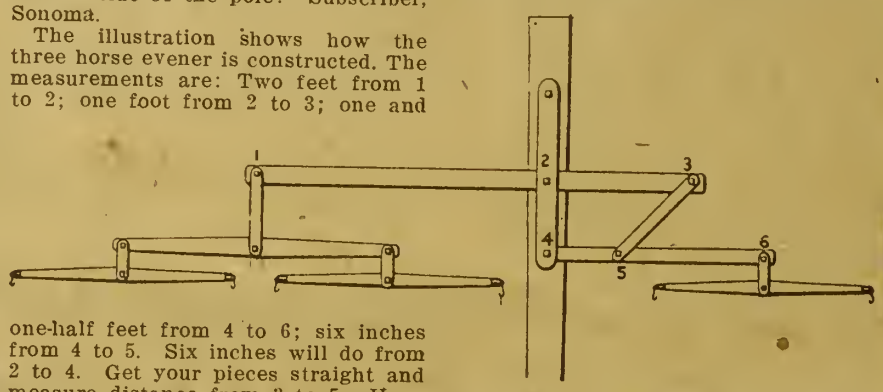
In response to query as to symptoms of worms in fowls Mrs. Koethen answers

'There are certain symptoms of worms in fowls, such as dullness and an unhealthy look, but these are seen in other diseases. There is no sure way of diagnosing worms unless you see them. The streaks of red, in connection with great looseness of the bowels, might indicate serious intestinal condition, but if they follow a dose of physic, and the birds are apparently in perfect health, there is nothing to worry about.

Three Horse Evener

Can you tell me how I can make a three horse evener—one that can be used in a pole disk to work two horses on one side of the pole?—Subscriber, Sonoma.

The illustration shows how the three horse evener is constructed. The measurements are: Two feet from 1 to 2; one foot from 2 to 3; one and



one-half feet from 4 to 6; six inches from 4 to 5. Six inches will do from 2 to 4. Get your pieces straight and measure distance from 3 to 5. Have square holes cut in irons for bolts, so they can be easily removed. In this cut the nigh horse walks next to tree; should you wish to drive the off-horse next to the tree, you can reverse the plan. You must place the double tree part back six inches from the place where you would hitch two horses, or shorten traces. I am using one on a disc and do not notice much side draft.

Sea Onion

Can you tell me what a sea onion is? It has been recommended as a cure for asthma.—Subscriber, Owensmouth.

Sea onion is a name given to the bulb of the squill, a common garden plant of Southern Europe. Cut in thin slices it is used as an expectorant and diuretic; in large doses, as an emetic and purgative. The botanical name is Urginea maritima.

Rabbit Questions

I recently bought a young Belgian doe that was not supposed to be bred. Yesterday I found evidences of miscarriage. She seems all right, only acts very quiet and stays in her nest all the time. If she did miscarry would she ever be able to carry a litter full time after losing her first? In case she recovers how long before she should be tried with a buck? Do you have for sale or can you recommend a thoroughly reliable book on rabbit raising, and what is the price?—Subscriber, Sacramento.

You do not state age of doe so it is hard to tell just what was cause of miscarriage. She might have been frightened or roughly handled. Bred does should be where it is quiet and receive no rough treatment. This she might have received prior to your receiving her. Do not think it will happen again. Wait a while and when the doe seems normal and active, eye bright, coat smooth, breed her. Feed sprouts of trees, some weeds and vegetables as set forth in Gibson's Rabbit Book, which we recommend (paper $1.00) or the Western Rabbit Book (50 cents), and we think all will be well with her. Follow instructions carefully and nature, care and proper feeding will bring you good results in nearly all cases.—W. D. W.

No 400-Egg Hens

O. C. Hudson of the Hudson Poultry Farm at Escondido calls our attention to a statement in the issue of November 2, to the effect that the pens in the Storrs egg-laying contest consist of five hens each. He says:

"This may mislead a number of your readers to believe there are actually some 400-egg hens in that yearly contest. The eighth annual contest is now under way. As in the previous competitions there are 100 pens of ten birds each. However, there are five-bird contests at Mountain Grove, Missouri, and Pullman, Washington. It takes some birds, you know, to make even a 200-egg average in these contests on a dry mash ration."

The Cultivator is always glad to have its statements challenged or corrected. We want nothing so much as the truth.

Early vs. Late Molters

You made a statement, "The early molting hens are the ones that can be depended upon to fill the egg basket this winter." If this is so why are all the experiment stations preaching keep the late molters; kill the early molters? Please give your experience about late vs. early molt through California Cultivator.—Subscriber, Glendale.

You are right about the late molters being the dependable layers. If I seemed to say anything to the contrary it was the fault either of my typewriter or the linotype man. The experience of experiment stations and commercial poultrymen coincides without a dissenting voice.—J. A. K.

Turkeys Too Small

In your issue of November 16 I notice an article by J. A. K. which states that a six months old tom turkey usually weighs from 16 to 20 pounds, a hen from 9 to 11. I have been raising turkeys three years and do not get anywhere near those weights. I have Bronze turkeys. Can you tell me the reason? My neighbors do no better. I just weighed two six months toms and they weikhed nine pounds each, both raised by different parties. Is it the breed, feed or management? If so kindly advise me how to improve.—Subscriber, Saugus.

There must be something wrong with your breeding stock if your toms weigh only nine pounds at six months of age. Perhaps their sire is undersized. You cannot expect good sized offspring from an undersized father. Again, your stock may be inbred. If you will mate your hens this coming year to a tom of standard weight, which is 25 pounds for a cockerel and 33 pounds for a yearling cock, and make sure that he comes of stock entirely unrelated to the hens, I think you will find your toms a good deal larger next year. Another factor which determines the size of the offspring is the age of the hen. Never breed from pullets. If you do you are almost certain to have undersized, delicate poults. A turkey hen should be two years old before she is used as a breeder. Feeding makes some difference, in the weight of the birds, but hardly the difference you mention. In Cultivator of December 7 is a description of the method of a Riverside woman who has been very successful with her turkeys. The article is entitled "From Shell to Roasting-Pan." —J. A. K.

Chicken Ticks

Can you tell me how to exterminate the California chicken tick? My hen house is infested with them after standing unused all summer. I enclose a specimen.—Subscriber, Reedley.

The specimens enclosed are surely ticks. You can recognize them by their bed-bug shape. Commercial poultrymen who have had experience

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ith these pests say there is no way f getting rid of them when a house s once infested, but you might try orrosive sublimate (eight ounces of ublimate to 20 gallons of water) ainting or spraying walls and roosts ill you are sure every tick has been eached. If the corrosive sublimate olution touches the ticks it kills hem, but there is always danger that hose hidden in cracks will not be ouched. If your house can be tightly losed, probably fumigating with for-naldehyde would destroy the ticks, s would the cyanide process used for itrus trees.—J. A. K.

Pullets Slow to Lay

Of my R. I. Red pullets hatched April 11, only one or two are laying. Were they hatched too late or what is he trouble? Am feeding butter milk nash with cooked potato parings in he morning, sprouted oats or green stuff at noon, and scratch feed at night. Frequently add fish meal to the morning mash, also keep grit, charcoal and shell where they can get it any time. Have two White Leghorn pullets hatched at the same time, one has been laying some for the last six weeks and the other one has not laid at all. What do you consider the best mash, and is there a good egg-maker or tonic you could recommend? Would you advise buying eggs or chicks from Hoganized stock? Have found incubator chicks rather sickly and hard to raise. What makes the yolks of the eggs a pale yellow? Is there something lacking in the feed? —Subscriber, Long Beach.

Your ration is very good, but the pale yolks of the eggs indicate that the hens are not getting enough green feed. Sprouted oats are not properly speaking green feed though there is some green in them. The best egg maker would be green cut bone or more buttermilk. When pullets are slow about beginning to lay a little extra animal food or protein in the form of linseed meal or Soy bean meal will often start them. You might add a little of the vegetable meal to your mash for a month and then discontinue it for a month. There is nothing quite so good as green cut bone, but this is not always available. For from 12 to 20 hens give ten cents' worth of bone twice a week. Your Red pullets ought to be laying. Probably they only need a little encouraging in the shape of extra protein. Buy your eggs or chicks from Hoganized stock if their egg record is satisfactory. The Hogan system tells you what a hen ought to do, not what she has done. Sometimes the two correspond; sometimes not.—J. A. K.

Hens Not Laying

Can you tell me what ails my hens, they all look fine but they don't lay? I have 34 hens and 20 pullets as large as hens and I am not getting an egg. I feed wheat and barley mixed, bone meal and the table scraps. Where there are any droppings and it gets damp it gets full of little white worms like maggots; has that anything to do with their laying? They have plenty of greens to eat, a large chicken yard and two houses. Hoping to get an early reply.—Subscriber, Marigold.

If your hens have no animal food except bone meal it is no wonder they do not lay. They should have a good dry mash, preferably a buttermilk mash, before them at all times. If you prefer to buy the ground grain and mix the mash yourself make it two parts bran (by measure) one part corn meal, one part ground barley, one-half part beef scrap or fish meal and one-half part Soy bean meal. If there is much meat in the table scraps some of the beef scrap may be omitted. Perhaps some of your hens are over two years old. If they are, not many eggs are to be expected. You do not say what breed your pullets are nor how old. Pullets of heavy breeds do not lay as early as Leghorns, and the larger the breed the later they are in getting busy.—J. A. K.

Breeding Leghorns

I would like to know how many hens a White Leghorn rooster will serve in the spring? — Subscriber, Hemet.

A White Leghorn rooster will serve from 12 to 20 hens in the spring, the number depending upon his age and vigor.—J. A. K.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Unsigned communications receive no attention.

Wire Cut

I have a horse with a bad wire cut on her back heel, in the fetlock joint. She runs and plays as if nothing was wrong, but her walking and running seem to give it no chance to heal. The wound is watery and pink in color. Please tell me what I should put on it and how to care for it so it will heal. —Subscriber, Coachella.

Clip off the hair around the wound and keep it as clean and dry as possible. Make a powder of equal parts of air slaked lime and talcum powder. Dust this on two or three times a day. It may be that the end of a nerve was cut off and is now exposed. That always causes a wound to heal very slowly. If you touch it with the end of your finger and it appears very sensitive then sear the surface by drawing a red hot iron across it quickly. After that the powder will heal it in a short time.

Swollen Ankle

I have a very good mule and about two weeks ago his ankles started to swell. When I would work him the swelling would disappear but now they seem to be getting worse. He keeps biting them as though they itch and has pulled the hair out from the knee down. He has no lice. Is it blood trouble? Please tell me what is the trouble and what to do for it.—Subscriber, Chowchilla .

The trouble may be partly due to the condition of the blood. Give him these powders. Four ounces nitrate of potash, one ounce of powdered rosin, four ounces powdered gentian and six ounces farina. Mix all and give a tablespoon of the mixture in the feed twice a day. Also clip off the hair over the swollen parts and use this lotion. Put one ounce of the chloride of zinc in a gallon bottle and fill it with clean water. Wet the ankles with the lotion twice a day. It will do more good if the lotion is warm when applied. Warm it in an earthen or granite dish but not in tin. Brush the swollen ankles often with a good stiff brush.

Thrush

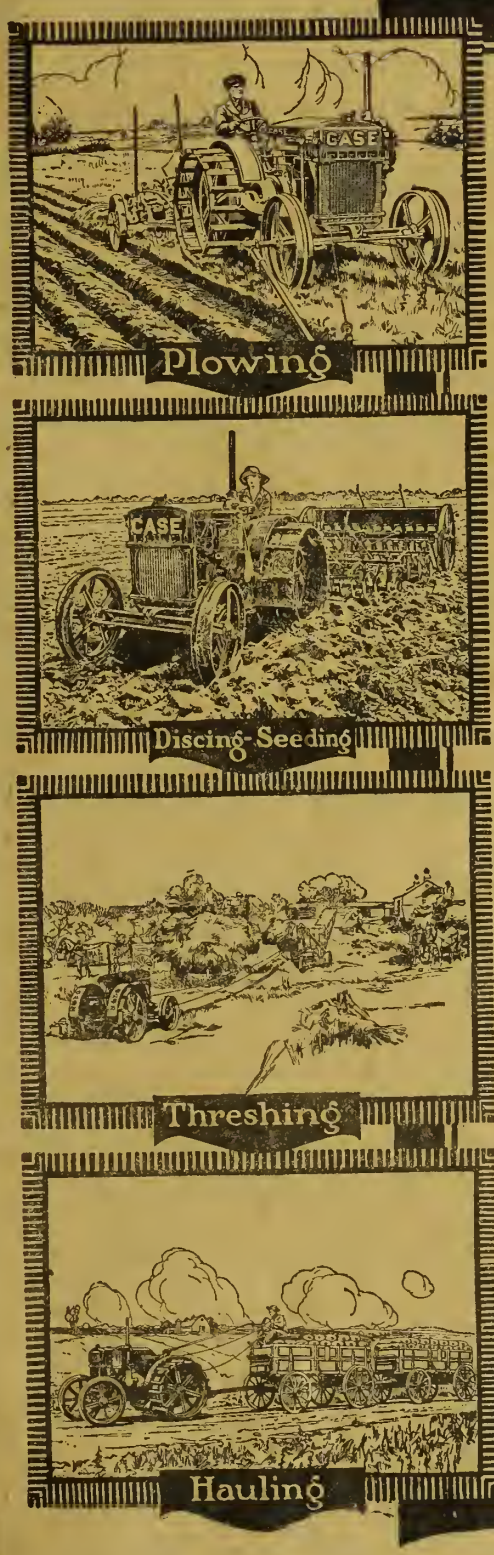
I have a horse with what I suppose is thrush. It is a soreness in the crack of the fore feet that oozes out a white watery substance. The horse is fat and in fine spirits. I have tried iodine, bluestone, distillate, creolin and formaldehyde and also cross words. Bluestone and distillate seem to keep it down but nothing I have tried seems to cure. What will I do next?—Subscriber, La Mesa.

Cut all the loose edges away and clean out all the pus with warm water that has a few drops of carbolic acid in it. Clean out the cracks to the very bottom by using a piece of cloth over the end of a table knife. Draw it through several times until you think no more pus can be left. Wipe it out clean and dry and then dust in plenty of calomel. Pack some of the calomel way to the bottom of the cracks. Put more calomel on the outside, cover with surgeon's cotton and bind it all on with a bandage. Keep the horse in a dry place. You may need to change the dressings a few times but each time they may be left on several days. If you do your work thoroughly the horse will soon be free from the thrush.

Injured Teat

My cow while in pasture cut the end of one of her teats about a quarter of an inch from the end and it seems to have cut to the milk duct. I kept the cut well greased and the outside is healed but there seems to be an obstruction inside. I have to start the milk with a chicken quill; then it milks all right for a stroke or two when it is almost impossible to squeeze the milk out again. I have kept a quill in all the time lately and then it seems to milk very well but the cow don't like the treatment. What is the remedy?—Subscriber, Escalon.

In healing the skin has probably drawn up smaller than it originally was and a fold has been left in the membrane that lines the milk duct. This acts as a valve and closes the opening. In time it will probably contract and give no more trouble. The quill or milk tube is about the only remedy. Tincture of iodine on the outside might help some. Grease it also so the iodine will penetrate better.



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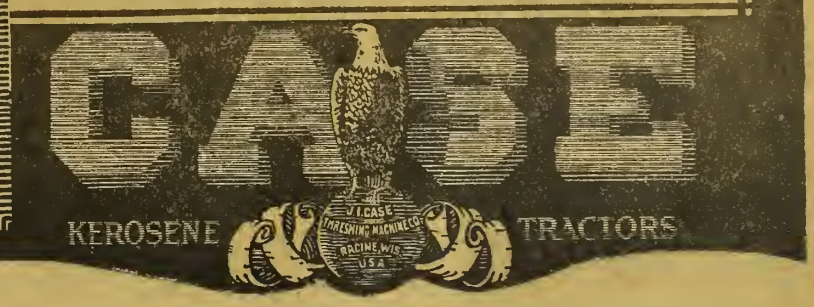

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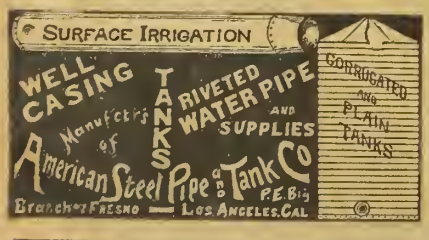

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LIBERTY FAIR LIVE STOCK SHOW

Continued from Page 595

ed in the senior calf class, and was the white Bashan Augusta, from the Dibblee herd. This youngster, full of quality and put up on pleasing lines, is an attractive prospect and had no difficulty in heading his class. Beauty's Dale, a sappy, good coated roan son of Earl of Avondale, was second over a Count Glory calf, shown by T. T. Miller, that, incidentally, is out of the same dam as the junior champion female. The fourth calf was a Dibblee entry that had plenty of size but was a bit coarse to the eyes of the judge. The March calf by Maxwalton's Pride 2nd, was a favorite with the judge, who found him nicely covered, and particularly nice about the tail head and down into his quarters. The white calf shown by T. T. Miller was a son of Greendale Sultan and although he might have been larger, his quality, style and acceptable type could have carried him higher. The third calf headed his class at the state fair, but was turned down because of a tendency to coarseness, that was not particularly noticeable.

Only an aged cow was shown and she was not especially attractive. Among the four two year olds, the thick, nicely fronted roan, Cloverleaf Lovely 2nd, from the Colorado herd, took the judge's fancy over Pacheco Lass 103rd, winner at the state fair. The winner, as noted, was thicker, handled well and had an attractive head, but she is not level of rump; quite plain, as a fatter of fact. The T. T. Miller heifer was hardly as large, but showed to better advantage than the Dibblee entry that was nursing a calf.

The six senior yearling heifers made a very strong class, and it was on this class that the ringside differed with the judge. After considerable deliberation the outstanding White Mayflower was left at the top. This heifer, by Sultan Mayflower, the bull at the head of the University herd, has developed well since last year. She still retains her sweetness, has a remarkable heart, a good top and carries her width well. She is, however, just a little rough about the tail and that finally cost her the grand championship. The light roan that was placed second is not at all attractive about the head and, while thick, is not overly strong of top, indeed she could have stood considerably further down the line, below her stall mate, left in third, and below, at least one, of the Hawkins entries. The Sacramento junior and reserve grand champion, Pacheco Lass 118th, headed the junior yearlings. Hillshade Beauty was second and the Dibblee entry was third. There was little question but that Flora Anoka, a white daughter of Lavender Sultan, should top the senior heifer calves. The Dibblee Estate had the other two entries—both attractive, but not of sufficient class to stand above the winner. The junior heifer calves made a nice class but were not particularly strong.

AWARDS

Exhibitors: Maxwell-Miller Cattle Co., Steamboat Springs, Colorado; T. T. Miller , Los Angeles; Pacheco Cattle Co., Hollister; Estate of Thos. B. Dibblee, Santa Barbara; Wm. Henn, Kansas City, Missouri.

Bull three years old or over,—1, Diamond Choice, T. T. Miller.

Bull two years old and under three,—1, Princely Stamp, Maxwell-Miller Co.,; 2, Hallwood Flash, Dibblee; 3, Greendale Sultan, T. T. Miller; 4, Pacheco Lad 92nd, Pacheco Cattle Co.; 5, Cumberland Goods, Wm. Henn.

Senior yearling bull,—1, Eminent Dale, Wm. Henn; 2, Orange Fragrance, Wm. Henn; 3, Golden Champion, Wm. Henn.

Junior yearling bull,—1, Pacheco Marshal, Pacheco Cattle Co.; 2, Matchless Elite, T. T. Miller; 3, Susan's Earl, Maxwell-Miller Co.; 4, Galnford Butterfly, Maxwell-Miller.

Senior bull calf,—1, Bashan Augusta, Dibblee; 2, Beauty's Dale, Maxwell-Miller; 3, Dalmeny Count, T. T. Miller; 4, King Lear, Dibblee.

Junior bull calf—1, Broadhook's Pride, Maxwell-Miller; 2, Amethyst's Sultan, T. T. Miller; 3, Pacheco Lad 145th, Pacheco Cattle Co.

Cow three years old or over,—1, Eliza Broadhook's 2nd, Maxwell-Miller.

Cow two years and under,—1, Clover Leaf Lovely 2nd, Maxwell-Miller; 2, Pacheco Lass 103rd, Pacheco Cattle Co.; 3, Sultana of Linwood 2nd, T. T. Miller; 4, Ormondale Beauty, Dibblee.

Senior yearling heifer,—1, White Mayflower, T. T. Miller; 2, Clear Spring Susan, Maxwell-Miller; 3 , O. J's. White Gloster, Maxwell-Miller; 4, Pacheco Lass 111th, Pacheco Cattle Co.; 5, Pacheco Lass 108th, Pacheco Cattle Co.; 6, Oakdale Claret, T. T. Miller.

Junior yearling heifer,—1, Pacheco lass 118th, Pacheco Cattle Co.; 2, Hillshade Beauty, Maxwell-Miller; 3, Meadow View Village Girl, Dibblee; 4, Maplewood Surprise, Dibblee; 5, Mina Marigold, Maxwell-Miller.

Senior heifer calf—1, Flora Anoka, Maxwell-Miller; 2, Princess Royal, Dibblee; 3, Lavender Queen, Dibblee.

Junior helfer calf,—1, Pacheco Lass 141st, Pacheco Cattle Co.; 2, Crimson Bud, T. T. Miller; 3, Sweet Marie 2nd, T. T. Miller; 4, Ruby Avon, Dibblee; 5, Pacheco Lass 148th, Pacheco Cattle Co.

Senior champion bull,—Princely Stamp, Maxwell-Miller; reserve senior champion, Diamond Choice, T. T. Miller.

Junior champion bull—Bashan Augusta, Dibblee; reserve junior champion, Pacheco Marshall, Pacheco Cattle Co.

Grand champion bull,—Princely Stamp, Maxwell-Miller; reserve grand champion, Bashan Augusta, Dibblee.

Senior champion female,—Clover Leaf Lovely 2nd, Maxwell-Miller; reserve senior champion, Eliza Broadhook's 2nd, Maxwell-Miller.

Junior champion female,—White Mayflower, T. T. Miller; reserve junior champion, Pacheco Lass 118th, Pacheco Cattle Co.

Grand champion female,—Clover Leaf Lovely 2nd, Maxwell-Miller; reserve grand champion, White Mayflower, T. T. Miller.

Aged herd,—1, Maxwell-Miller; 2, T. T. Miller; 3, Dibblee; 4, Pacheco Cattle Co.

Young herd,—1, Pacheco Cattle Co.

Calf herd,—1, Pacheco Cattle Co.; 2, T. T. Miller.

Get of sire,—1, True Dale, Pacheco Cattle Co.; 2, Scotch Cumberland, Dibblee.

Produce of dam,—1, White Briar, T. T. Miller; 2, Overbrook Susan 2nd, Maxwell-Miller.

The Herefords

The Hereford show suffered more than the Shorthorns through the postponements of the fair. One herd that was in the stalls for the October opening found it necessary to ship several weeks ago in order to make the Royal and International, and the one California herd that was entered did not arrive. Consequently, with the exception of the bull classes, the fight for honors was between two herds, the Hereford Corporation of Wyoming, Cheyenne, Wyoming, and the Curtice Cattle Co., of Calgary, Canada. For the most part the honors were awarded fairly equally and generally to the satisfaction of all. Chas. H. Hill of Los Angeles did the judging.

The only entry in the aged bull class was the massive 2400 pound Beau Perfection 48th from the Canadian herd. This bull represents to a high degree the type of Hereford that the Western man likes. He has the scale and bone demanded but is not coarse. His progress down the line to the grand championship was, for the most part, clear sailing, although the junior champion gave him a scare for the final decision.

The five two year old bulls caused the judge some worry. Two types were represented in the lot, Wyoming Prince and Beau Donald 192nd, representing the larger type, and the three Henn entries were of the pattern most in favor in the Eastern shows—the thick, soggy, short legged kind. After working the class over carefully the judge split his type. Beau Donald 192nd was placed first. He is a bull of great size, with one of the most imposing fronts to be seen—a strong, beautiful head, full of character and topped with a magnificent pair of horns. He is not so pleasing when viewed from the rear, owing to the fact that he is noticeably lacking in quarter development. With full quarters there is little question but that he would have been premier bull.

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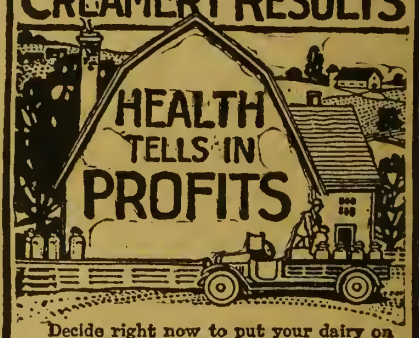

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Having selected the top, the crowd felt that the logical second place would go to the Wyoming bull, but the judge thought otherwise and picked the cracking good light colored bull, Beau King 10th, shown by Henn, and sandwiched him in ahead of Wyoming Prince. Under a different judge it is quite possible he would have stood first. Henn showed another bull of much the same stamp as his second bull into fourth place and a grandson of Perfection Fairfax, with many good qualities, but lacking finish, took fifth money.

The junior yearling winner, Bonnie Laddie, afterwards made junior champion, is a calf of much promise and was an outstanding winner in his class. Lamplighter 19th, a Henn entry, fitted into second nicely over Perfect Lad 4th.

Only one entry came forward in the senior bull calf class. The three junior calves made an interesting class. The sappy New Era 2nd won easily over his stall mate and the Canadian calf looked about right in third.

The female classes were entirely between the Canadian and Wyoming herds. Curtice showed the only aged cow. Each firm showed a two year old and neither were especially strong. Curtice had the one senior yearling and the only senior calf. The junior yearling class brought out the undefeated Miss Rialto 2nd, a beautiful young thing with a sweet head, a neat horn, and nicely balanced fore and aft. She was clearly the class of the female division and after winning in class she passed on down the line having everything her own way. The Wyoming herd had the top in the junior calves with the lovely little Lady Fairfax 2nd. The second calf had more size but was hardly so good along the top or at the tail head.

In the group classes the judge favored the herd with the stronger females and for that reason the Wyoming herd had everything. The ringside expected to see the aged herd go to the Canadian exhibit on account of the outstanding bull but the tie went the other way.

All in all, the Hereford show was good. A great deal of interest was manifested in the breed and at least one new herd will become a fact as a direct result of the showing made at the Liberty Fair.

AWARDS

Exhibitors: Hereford Corporation of Wyoming, Cheyenne, Wyoming; Curtice Cattle Co., Calgary; Will Henn, Kansas City, Mo.
Bull three years old or over—1, Beau Perfection 48th, Curtice Cattle Co.
Bull two years old and under three—1, Beau Donald 192nd, Curtice Cattle Co.; 2, Beau King 10th, Henn; 3, Wyoming Prince, Hereford Corporation; 4, Beau Banner 5th, Henn; 5, Famous Fairfax, Henn.
Senior yearling bull—1, Disturber 11th, Henn; 2, Beau Donald 206th, Curtice Cattle Co.
Junior yearling bull—1, Bonnie Laddie, Hereford Corporation; 2, Lamplighter 19th, Henn; 3, Perfect Lad 4th, Hereford Corporation.
Senior bull calf—1, Beau Donald 215th, Curtice Cattle Co.
Junior bull calf—1, New Era 2nd, Hereford Corporation; 2, Rossman Gold Dust, Hereford Corporation; 3, Beau Donald 222nd, Curtice Cattle Co.
Cow three years old or over—1, Belle Perfection 45th, Curtice Cattle Co.
Cow two years old and under three—1, Miss Dale, Hereford Corporation; 2, Belle Donald 236th, Curtice Cattle Co.
Senior yearling heifer—1, Belle Donald 239th, Curtice Cattle Co.
Junior yearling heifer—1, Miss Rialto 2nd, Hereford Corporation; 2, Perfect May 4th, Hereford Corporation; 2, Belle Donald 243rd, Curtice Cattle Co.
Senior heifer calf—1, Belle Donald 254th, Curtice Cattle Co.
Junior heifer calf—1, Lady Fairfax 2nd, Hereford Corporation; 2, Belle Perfection 68th, Curtice Cattle Co.; 3, Miss Dare 10th, Hereford Corporation.
Senior champion bull—Beau Perfection 48th, Curtice Cattle Co.; reserve senior champion, Beau Donald 192nd, Curtice Cattle Co.
Junior champion bull—Bonnie Laddie, Hereford Corporation; reserve junior champion, New Era 2nd, Hereford Corporation.
Grand champion bull—Beau Perfection 48th, Curtice Cattle Co.; reserve grand champion, Beau Donald 192nd, Curtice Cattle Co.
Senior champion female—Miss Dale, Hereford Corporation; reserve senior champion, Belle Perfection 45th, Curtice Cattle Co.
Junior champion female—Miss Rialto 2nd, Hereford Corporation; reserve junior champion, Lady Fairfax 2nd, Hereford Corporation.
Grand champion female—Miss Rialto 2nd, Hereford Corporation; reserve grand champion, Lady Fairfax 2nd, Hereford Corporation.
Aged herd—1, Hereford Corporation; 2, Curtice Cattle Co.
Young herd—1, Hereford Corporation; 2, Curtice Cattle Co.
Calf herd—1, Hereford Corporation; 2, Curtice Cattle Co.
Get of sire—1, get of Beau Donald 187th, Curtice Cattle Co.
Produce of dam—1, produce of Belle Perfection 18th, Curtice Cattle Co.; 2, produce of Belle Perfection 20th, Curtice Cattle Co.

Aberdeen-Angus

The Congdon & Battles herd of Aberdeen-Angus, from North Yakima, Washington, was the only herd of doddies entered. This herd, which is considered one of the leading collections of the breed in this country, attracted a great deal of attention, and made a highly favorable impression on many Southern California cattlemen. A full show herd was led before Chas. H. Hill, who rated them somewhat differently than was expected. The judge upset all "dope" when he made the aged cow, Idessa of Rosemere, senior champion and the junior yearling heifer, Barbara of Rosemere 24th, junior and grand champion, thus overlooking entirely the cracking two year old, Queen of Rosemere 5th, that was junior champion at the 1917 International and still quite the most attractive female in the herd.

AWARDS

Exhibitors: Congdon & Battles, North Yakima, Washington.
Aged bull—Merman of Tierra Alta.
Bull, two years old and under three—Quality Lad of Rosmere 3rd.
Bull, senior yearling,—Black Q. E. 5th.
Bull, junior yearling—Idolmere 4th.
Senior bull calf—Blackcapman C. B.
Junior bull calf—1, Knight C. B.; 2, Kendrick C. B.
Aged cow—Idessa of Rosemere.
Cow, two years old and under three—Queen of Rosemere 5th.
Heifer, senior yearling—Pride of Rosemere 20th.
Heifer, junior yearling — Barbara of Rosemere 24th.
Senior heifer calf—Pride of C. B. 3rd.
Junior heifer calf—Blackbird C. B. 13th.
Senior bull—Quality Lad of Rosemere 3rd.
Junior champion bull—Knight C. B..
Grand champion bull—Quality Lad of Rosemere 3rd.
Senior champion female—Idessa of Rosemere.
Junior champion female—Barbara of Rosemere 24th.
Grand champion female—Barbara of Rosemere 24th.
Get of sire—get of Oakville Quiet Lad.
Produce of dam—produce of Blackbird Gift 2nd.

THE DAIRY CATTLE

The show of dairy cattle was a distinct disappointment to the management and the visitors, and was not representative of the dairy industry of California and, with the exception of a few herds, was not a creditable exhibition.

Had it not been for a few Holstein and Guernsey breeders and the McFarland Ayrshires, the show would have been a total failure. It is hardly possible that any show approaching the importance or size of the Liberty Fair has ever been held in this state that could not boast of a single Jersey entry, but such was a fact at the Los Angeles show.

The Holsteins

There was little competition until the champions were brought forward for Judge E. W. Major to place—many of the classes having only one entry and several of the classes not filling at all.

Frampton Bros. had the only aged bull—Segis Pontiac De Kol Burke Clyde, junior champion at Sacramento in 1916. This bull has developed into a highly attractive bull, of nice lines, and style, together with those qualities one looks for in a high class dairy bull. The two year old bull had little

Continued on Page 610

Wyoming Herefords Won

the following Prizes at the

Liberty Fair, Los Angeles

Wyoming Prince, 3rd prize two year old bull.
Bonnie Laddie, 1st prize junior yearling and junior champion bull.
Perfect Lad 4th, 3rd prize junior yearling.
New Era 2nd, 1st prize junior calf and reserve junior champion.
Rossman Gold Dust, 2nd prize junior calf.
Miss Dale, 1st prize two year old cow.
Miss Rialto 2nd, 1st prize junior yearling heifer, junior and grand champion.
Perfect May 4th, 2nd prize junior yearling heifer.
Lady Fairfax 2nd, 1st prize junior heifer calf, reserve junior and reserve grand champion.
Miss Dare 10th, 3rd prize junior heifer calf.
We also won the aged herd, young herd and calf herd.

OUR HERD OF COWS were bred and grown on our 25,000 acre ranch. They descend from a choice lot of imported cows with which have been used only the best Anxiety-bred bulls. Our Herefords possess substance, size and quality. If you need bulls with these qualities we can furnish them in carload lots.

Hereford Corporation of Wyoming
Cheyenne, Wyo.
Raymond S. Husted, V. P. and Gen. Mgr., Exchange Bldg., Denver, Col.
William Cox, Herdsman

Buy Durocs Now

From the Uneeda Glenn County herd because this herd produced more champions and other prize-winners at the 1918 California and Oregon State Fairs than any one herd on the coast.

We now offer young boars and gilts, bred gilts and bred sows, representing the choicest blood lines of the breed. Our prices are reasonable and every animal is sold on a guarantee.

You can't go wrong on our kind.

H. P. Slocum and Son
Willows, California

Grand Champion Boar **Grand Champion Sow**
Sacramento State Fair

Berkshires

Forty-three or our litters this year averaged ten to the litter. We sell foundation sows and boars to head your herd from our easy keeping, heavy producing strains. Write to

JAMES MILLS ORCHARDS, Hamilton City, California

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Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, $2145 cash awards. Write to

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Hanford, Kings County, Cal.

Better service is assured by the advertiser if when writing you mention the California Cultivator.

ASSOCIATION PLANS TO SOLVE THE 1919 LABOR PROBLEM

The Valley Fruit Growers' Association is signing up under its new membership plan ranch employers of labor in Fresno, Madera, Kings, and Tulare Counties.

This association successfully handled the difficult labor situation of the past year by establishing central labor camps throughout the valley, making labor available when needed. The workers were steady, the prices stable and reasonable, and the general situation in the neighborhood was improved by the knowledge that these camps could be depended upon not only for the regular supply of help, but also for extra men in emergencies.

One of the chief reasons for the present campaign for memberships and the three-year contract is to place the growers' association in a position to buy tents and equipment and to prepare in time for next season. Setchel after a survey of state wide conditions, believes that the labor shortage in 1918 will be nearly as acute as in the past year. The association struggled along last year with little equipment, and while not much is being asked this year, the camps, at least, are to be a more prominent feature of the preparations. As publicity and the good wages paid and steady employment have proved the best methods of attracting the workers here, so he believes the camps will be the best way to insure their return and to hold them throughout the season of the various harvests.

Numbers of workers have left the agricultural sections altogether. The officials of the association believed that most of them who have gone to the shipyards will remain there or to the city. Once having had a taste of the war profits in the form of extremely high wages and the things they will buy, a great part of them will not return to the farming sections. For this reason, in his opinion, the labor outlook in the valley never looked more serious.

"The situation of the present is not unlike that in the spring of 1916," said an official. "At that time an association was shown to be absolutely necessary. That year, by means of organization and publicity, enough men were secured to handle a record crop in record time. The state's labor resources were developed in 1917, and Oriental labor played a part in that development.

"The California Associated Raisin Company is cooperating to receive assessments of members of that company and so lighten the burden of collection, which would be quite heavy if each grower had to be seen to collect the ten cents an acre. The growers are mailing in their checks. Old members, especially, are doing this, thus making the cost of collection amount to only the cost of a postage stamp."

PRUNE GROWERS LOOKING AHEAD

Prune growers are determined not to be caught again as they were the past year without means of saving their fruit in case of unseasonable rains. They have started an active campaign to find out about evaporators for the caring for fruit, whether it be from unseasonable weather or from an excess crop to enable them to save as much as possible.

In line with this effort Prof. W. V. Cruess of the state university and Horticultural Commissioner Cody, of Santa Clara County have been going over that county and collecting all

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Plant Fruit T

IF you have not already o
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Our explanation of varieties, our practical i
and vineyards, compiled by men fully experie

Here is a sample of the concise way our catalogue deals with various fruits:

Peaches

California leads all other states in the production of peaches, in fact it is the leading horticultural product of the state.

Both the Clingstone and Freestone peaches have been bringing handsome returns to the growers and the heavy demand for foreign shipments as well as for home consumption, makes peach growing one of the most profitable industries.

The California Peach Growers' Association represents 6000 growers. It is incorporated for $1,000,000, and now controls 85 per cent or more of the tonnage sold on the market. Since this Association has been formed, grades have been standardized and prices have been obtained which have been remunerative to the grower and give an impetus to the planting of new acreage.

The trees do best on well-drained, sandy loam and white ash soils. If planted on heavy soils, care must be taken to have it well drained. The so-called "hard-pan lands," if properly blasted allowing the roots to extend into the deep, free soil below, produce fruit of the finest quality and the trees are very prolific. Such land is usually rough and requires leveling before planting.

When the trees are set, cut them back to 18 inches from the top of the ground and shorten in all branches, if any, to two buds.

The first winter after planting cut away all branches up to 12 inches from the ground and leave from three to five branches to form the head of the tree and prune these back to 12 inches. These branches should be distributed on the trunk of the tree to prevent crowding and development of forks. Forked trees, when loaded with fruit, are liable to slip down and ruin or entirely kill them.

The second winter thin out the small lateral branches leaving not more than two or three on each of the framework branches and cut these back about one-half. This system can be followed each year but thinning of lateral branches must be resorted to in order to prevent smothering the inside of the tree.

As a rule, peaches are set from 20 to 24 feet apart. On light soils set the trees 20 feet apart, but on heavier soils 22 to 24 feet is preferable.

Peaches are divided into two classes, viz., Freestones and Clingstones. Some of the very early varieties of the freestones cling slightly to the pit, which, however, is not an objectionable feature. The freestone varieties are used for canning, drying and shipping, while the clingstones are principally used for canning and shipping. The freestones best suited for canning are Foster, Elberta, Lovell and Salway; those for drying are Elberta, Muir and Lovell.

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The Muir Peach

Is Unexcelled for Peeling and Drying Purposes

MUIR—The Muir is the King or Queen, as it might be called, of all the free stone peaches for drying purposes in California. It was originated on the place of John Muir, near Silverville, California, but was first propagated by Mr. G. W. Thissell, of Winters, California. It is very large in size and a perfect free-stone, having a clear yellow flesh, which certainly presents a most beautiful appearance when properly dried.

In addition to its attractive appearance it contains more sugar qualities than any other peach, which allows it to dry exceedingly heavy, making it a very profitable variety to the producer. We feel that this peach is so widely known and favored among California planters that it is needless for us to mention all of its good qualities.

We believe that everyone who contemplates planting a peach orchard for drying purposes should certainly not overlook the Muir. The California Peach Growers' Association have demonstrated that this variety is the only one that can be "Process Peeled" successfully. Time of ripening latter part of July.

Drying of Peaches

In drying peaches great care should be exercised so as to obtain a clean, well colored, and desirable product which always tends to make it more saleable.

Fruit should never be picked, for drying until well ripened, at which time it contains its largest quantity of sugar, dries very rapidly, weighs heavy, and makes a large percentage of fancy fruit. In picking up fruit which has dropped voluntarily, sunburnt and green shriveled fruit should never be taken, as it only tends to lessen the value of the good product and reduces the profits.

In cutting fruit one should be careful to see that a complete circle of the fruit, with the knife, is made otherwise it is partly torn and when dried presents a very poor appearance.

In placing the fruit on trays, which are used for sulphuring and drying, it should all be placed face up; the tray having cleats of sufficient height to admit the largest peaches without touching other trays when stacked. These trays should not be allowed to stand longer than is absolutely necessary before entering the sulphur house. When this is allowed a crust forms on the fruit and proper sulphuring is very difficult. * * *

For complete chapter on Drying see our New Catalogue

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Fresno, Cal.

selections of right varieties. Commercial
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well avail yourself of our tree planting serv-
penny and should make your planting more

data possible to work out the best way this may be gone at and at the same time to find the best type of evaporator for the climate and fruit of this valley. Their report will be watched for with great interest by growers.

Sorting Out Fermented Fruit

Experiments have also been made in sorting out fermented prunes from the sound fruit. To do this solutions have been employed of five per cent salt, of ten per cent sugar and of ten per cent ordinary corn syrup. Most of the fermented prunes will float in these solutions, the sound fruit sinking to the bottom. By means of a dipping basket and small tank the sorting by this method can be carried on rapidly. Slabs that are not fermented will sink with the sound fruit and must be removed later by hand sorting. A salt solution leaves the prunes with a dull finish, while a corn syrup of glucose solution produces a glossy appearance which is more attractive than the finish left by the salt.

FARMERS UNION LAUNCHES FEDERATION OF FARM ORGANIZATIONS

At the state meeting of the Farmers Union held last week at Modesto a movement was started to form an organization of all farmers bodies in the state, this federation to be known as the California Federated Farm Organization. A committee was appointed to investigate the conditions over the state and determine the most efficient manner of coordinating the activities of the farmers' organizations of California. They will report to the different organizations on the character of association evolved and it is expected that every body of agriculturalists in the state will become affiliated with the organization.

The personnel of this committee: John A. Orr, Ceres; J. M. Cochrane, Modesto; R. H. Frazer, Modesto; Guy H. Miller, Modesto, and N. E. Saunders, Chowchilla.

A similar effort was made some years ago but apparently the time was not ripe for carrying it to a successful conclusion. Such cooperative action of all farmers' organizations is a vital business necessity. Under such a plan the individual organizations of citrus men, bee men, vegetable growers and all others should have control of their own affairs and should not by any means lose their identity, but in matters of legislation and larger affairs affecting the interests of all there should be some machinery for securing quick, centralized action.

CLOSING THE RAISIN SEASON

President Giffen of the Associated Raisin Company estimates the crop of the season just closed at about 160,000 tons. This is only exceeded by the record crop of last year. The early rains cut down the output at least 20 per cent.

Checks for final payment are now being made and growers will receive a total of a million and a quarter dollars. The payments will be made at the following rates: Muscats, $7.04 per ton; Thompsons, $17.70; Sultanas, $10.88; Malagas, $12.84; Feherzagos, $11.50.

As 70 per cent of the crop had been sold when the rains came, it was impossible to raise the price. Two years ago the price was raised one cent per pound. The crop had been only 20 per cent sold at that time. In addition, the government denied the request of the association to raise the price on unsold Thompsons.

breeders of pure bred hogs

Calco Hog Troughs prevent disease—they are absolutely sanitary.

Calco Hog Troughs are made of Armco rust-resisting iron — strong, durable, smooth.

With Calco Troughs every particle of feed is used, none left to sour and breed filth.

Popular sizes in Calco Troughs include:

Size	Depth	Length	Price
10¼ in.	5 5-16 In.	40 in.	.....$3.70
10¼ in.	5 5-16 in.	60 In.	..... 4.50
14 in.	7 3-16 In.	24 in.	..... 4.55
14 in.	7 3-16 in.	60 in.	..... 6.55

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A. B. COMFORT - Guernsey, Cal.

Correspondence with the advertisers in the California Cultivator will convince you that their articles will save you money.

LIBERTY FAIR LIVE STOCK SHOW

Continued from Page 607

to recommend him and in no way was of show yard caliber. The Burr Creamery Co. had an easy top in the senior yearling class as the three entries that stood below were much after the same pattern as the two year old. Stalder Bros. had an attractive junior yearling, Rosamaine's Pontiac Netherland, that would have given the junior champion a run for the money had he been shown to advantage. The winning senior bull calf was quite pleasing, but Stalder Bros. showed two good youngsters. The aged cow, Belle Juliana De Kol, shown by the Los Angeles County home, was really a good sort and furnished the judge his grand champion female. Only one two year old was shown. The senior yearling was afterwards made junior champion and the junior heifer calf shown by Stalder Bros. was also reserve junior champion.

AWARDS

Exhibitors: Frampton Bros., Artesia; Mrs. P. H. Jarrett, Lancaster; Stalder Bros., Riverside; Los Angeles County Farm, Hondo; Burr Creamery Co., Los Angeles; G. M. Brown, Los Angeles.

Bull three years old or over—1, Segis Pontiac De Kol Burke Clyde, Frampton Bros.

Bull two years old or under three—1, King Segis Pontiac, Mrs. P. H. Jarrett.

Senior yearling bull—1, Sir Manuel Hengerveld, Burr Creamery Co.; 2, King Segis Pontiac Pieterje Jr., Mrs. P. H. Jarrett; 3, Prince Arfidgara Walker, Mrs. P. H. Jarrett; 4, Prince Delmar De Kol Walker, Mrs. P. H. Jarrett.

Senior bull calf—1, Sir Manuel Korndyke, Burr Creamery Co.; 2, Rosamalnes Spofford, Stalder Bros.; 3, Rosamaines De Kol, Stalder Bros.

Cow four years old or over—1, Belle Jullana De Kol, Los Angeles County Farm; 2, Emma Palmer Longfield, Burr Creamery Co.

Cow two years old or under three—1, Hazelwood Doo Doo, G. M. Brown.

Senior yearling heifer—1, Hazelwood Ormsby Korndyke, G. M. Brown; 2, Blanche Segis Walker, Stadler Bros.

Junior yearling heifer — 1, Abbekerk Pontiac, Stalder Bros.

Junior heifer calf—1, Rosamaines Segis Ormsby, Stalder Bros.; 2, Rosamaines Cleopatra Ormsby, Stalder Bros.; 3, Rosamaines Duchess Ormnsby, Stalder Bros.

Senior champion bull—Segis Pontiac De Kol Burke Clyde, Frampton Bros.

Junior champion bull—Sir Manuel Hengerveld, Burr Creamery Co.; reserve junior champion, Rosamalnes Pontiac Netherland, Stalder Bros.

Grand champion bull—Segis Pontiac De Kol Burke Clyde, Frampton Bros.; reserve grand champion, Sir Manuel Hengerveld, Burr Creamery Co.

Senior champion female—Belle Juliana De Kol, Los Angeles County Farm; reserve senior champion, Hazelwood Doo Doo, G. M. Brown.

Junior champion female — Hazelwood Ormsby Korndyke, G. M. Brown; reserve champion, Rosamaines Segis Ormsby, Stalder Bros.

Grand champion female—Belle Juliana De Kol, Los Angeles County Farm.

Young herd—Stalder Bros.

Get of sire—1, Burr Creamery Co.; 2, Stalder Bros.

Produce of dam—1, Los Angeles County Farm; 2, Burr Creamery Co.; 3, Stalder Bros.

The Guernseys

Three herds of Guernseys were on hand but owing to the fact that few classes contained over one or two entries, Judge Major had little work in satisfying himself as to how to rank them. The chief attraction was the aged bull, Imp. Itchen May King, the celebrated Dupee herd bull. He was shown against the Humphrey entry, Bullion of Edgemoor, and there was no question as to the victor. The younger bull classes contained only one entry each.

The female classes were not difficult until the junior yearlings were reached and in this class Mary Lady of Edgemoor and Escalon Mary furnished very close competition. The former won because of a lighter shoulder, a straighter top and a better udder. When the eligibles came forward for the junior championship a decision bordering on the hairline sort was necessary. Humphrey showed a heifer, in milk, that was a trifle weak back of the shoulders and a little droopy behind, but of slashing dairy type; against her, and the winner, was a daughter of the senior and grand champion cow, of beautiful type, but a little heavy in the shoulder and a bit thick in the hide. She had, however, a beautiful top, splendid depth and a beautiful udder.

AWARDS

Aged bull—1,Imp. Itchen's May King, Dupee; 2, Bullion of Edgemoor, Humphrey.

Senior yearling bull—1, Escalon Challenger, Humphrey.

Senior bull calf—1, Dauntless of Edgemoor, Dupee.

Junior bull calf—1, Escalon Gold Brick, Humphrey.

Aged cow—1, Imp. Mildred 2nd of les Godaines, Dupee; 2, Imp. Dawn of Sarnia, Dupee.

Senior yearling heifer—Escalon Lady, Humphrey.

Junior yearling heifer—1, Merry Lady of Edgemoor, Dupee; 2, Escalon Mary, Humphrey; 3, Calla Grove Itchen May, Calla Grove Farm.

Senior heifer calf—1, Century Girl of Edgemoor, Dupee; 2, Escalon Evangeline, Humphrey; 3, Escalon Bopeep, Humphrey.

Junior hefer calf—1, Calla Grove Merry May, Calla Grove Farm; 2, Escalon Dorothy, Humphrey.

Senior champion bull—Imp. Itchen May King, Dupee.

Junior champion bull—Dauntless of Edgemoor, Dupee; reserve junior champion, Escalon Gold Brick, Humphrey.

Grand champion bull—Imp. Itchen May King, Dupee; reserve grand champion, Dauntless of Edgemoor, Dupee.

Senior champion female—Imp. Mildred 2nd of les Godalines, Dupee.

Junior champion female—Century Girl of Edgemoor, Dupee; reserve junior champion, Escalon Lady, Humphrey.

Grand champion female—Imp. Mildred 2nd of les Godalines, Dupee; reserve grand champion, Century Girl of Edgemoor, Dupee.

Young herd—A. B. Humphrey, Escalon.

Get of sire—1, get of Imp. Itchen May King, Dupee; 2, get of Bullion of Edgemoor, Humphrey.

Produce of Dam—1, produce of Merry Dance of Riverside Farm, Dupee; 2, produce of Calla Grove Itchen May, Calla Grove Farm.

The Ayrshires

E. B. McFarland, San Mateo, had the only herd of Ayrshires, but because of the admitted high quality of his show string, considerable strength was added to the dairy cattle division. This herd has been in the stalls at Exposition Park since October 14.

AWARDS

Exhibtor: E. B. McFariand, San Mateo.

Senior yearling bull—1, Steybrae Improver.

Junior yearling bull—1, Steybrae Commander.

Senior bull calf—1, Steybrae Robins Queechy.

Junior bull calf—1, Steybrae Captain; 2, Steybrae White Prince.

Cow, four years old or over—1, Willowmoor Vesta 4th; 2, Burnside Mary 7th.

Cow, three years old and under four—1, Muna Rosewood.

Heifer, two years and under three—1, Lady Stair of Steybrae; 2, Caroline of Steybrae.

Senior yearling heifer—1, Steybrae Grace Darling; 2, Steybrae Jeannie Deans.

Junior yearling heifer—1, Steybrae White Queen; 2, Steybrae Peggoty.

Senior heifer calf—1, Steybrae Kirsty; 2, Steybrae Shirley.

Junior heifer calf—1, Steybrae Cherry; 2, Steybrae Nona.

Junior champion bull—Steybrae Commander; reserve junior champion, Steybrae Improver.

Grand champion bull—Steybrae Commander; reserve grand champion, Steybrae Improver.

Senior champion female—Willowmoor Vesta 4th; reserve senior champion, Lady Stair of Steybrae.

Junior champion female — Steybrae Kirsty; reserve junior champion, Steybrae Grace Darling.

Grand champion female — Willowmoor Vesta 4th; reserve grand champion, Steybrae Kirsty.

Produce of dam—Produce of Willowmoor Jean Douglas.

Brown Swiss

J. Irwin Burk, Gilbert, Arizona, was the only exhibitor of Brown Swiss cattle.

THE SWINE SHOW

The swine show might be termed a local show, but for the fact that the Bassett and Marsh Poland Chinas and the Humphrey Berkshires were entered. And if one had any doubts as to what kind of hogs are being produced in the Southern end of the state this show would set him right. Southern California is raising good hogs—as good as will be found in the West—and lots of them.

The Durocs and Hampshire departments numbered the largest entries but the Poland Chinas and the Berkshires yielded to no breed in point of real quality. Only a few Chester Whites were shown.

The Duroc-Jerseys

The Durocs were out in force with an exhibit that was "class" from start to finish and indicated why Southern California has come to be considered a Duroc center. The aged boars were headed by Thompson's Pilot Defender, an extremely large mellow sort, good headed and with a good top, but a little lacking in underpinning, the Conejo Ranch were second with Councillor, reserve grand champion boar at Sacramento last September, and the Ireland Ranch was third with their good boar, Cherry Volunteer 2nd. One of the most pleasing types noted among the boars was the cracking good senior boar shown by Graham. This boar, Orion's King Gano, looks to be one of the most valuable herd boar prospects in the state. He has extreme length, plenty of size, and a smoothness rarely seen. Many felt that he could have been made grand champion, but when the championship ribbon was to be tied, Professor J. I. Thompson, who placed the Duroc awards, asked to withdraw as judge because he selected the Graham boar while in the East. Judge Doty made the decision.

The older sow divisions were made attractive because of splendid array of sows shown by the Conejo Ranch. Incidentally, most of the Conejo sows were sold during the show.

The pig classes were dominated by the Ireland Ranch entries that showed exceptional size, together with the type most sought after in modern show rings.

Exhibitors: Ireland Ranch, Owensmouth; W. B. Hewitt, Van Nuys; C. T. Thompson, Bishop; Conejo Ranch, Newbury Park; Donald H. Graham, Lancaster; H. W. Hellman Estate, Los Angeles.

Aged boar—1, Thompson's Pilot Defender, Thompson; 2, Councilor, Conejo Ranch; 3, Cherry Volunteer 2nd, Ireland Ranch.

Senior yearling boar—1, Pathfinder's Pride, Conejo Ranch.

Junior yearling boar — 1, Ireland's Orion Defender, Ireland Ranch; 2, Pioneer Defender, Hellman; 3, Orion King of Ireland, Ireland Ranch.

Senior boar pig—1, Orion's King Gano, Graham; 2, Model Lad, Conejo Ranch; 3, Latest Model, Conejo Ranch; 4, Prince Dreadnaught, Graham.

Junior boar pig—1, Ireland's Cardinal Model, Ireland Ranch; 2, Golden Cherry 7th, Hewitt; 3, Golden Cherry 5th, Hewitt; 4, unnamed, Hellman; 5, Cherry King Del Sur, Graham.

Aged sow — 1, Enchantress, Conejo Ranch; 2, Critic's Lady 3rd, Thompson; 3, Belle Crescent 2nd, Thompson; 4, Arabelia, Conejo Ranch.

Senior yearling sow—1, Model Lady, Conejo Ranch; 2, Western Princess, Conejo Ranch; 3, Fairy Princess, Conejo Ranch.

Junior yearling sow—1 Critic Rose, Conejo Ranch; 2, Pioneer Queen, Hellman; 3, Sunshine Girl, Conejo Ranch; 4, Starlight, Conejo Ranch; 5, Golden Girl, Conejo Ranch.

Senior sow pig—1, Pathfinder's Golden, Conejo Ranch; 2, Little Sallie, Graham; 3, Model Rosebud, Conejo Ranch 4, Windsor Queen Again, Graham; 5, Model's Bess, Conejo Ranch.

Junior sow pig—1, Cardinal's Model Queen, Ireland Ranch, 2, Big Cherry Lady, Graham; 3, Golden Cherry 2nd, Hewitt; 4, Golden Cherry 3rd, Hewitt.

Senior champion boar — Thompson's Pilot Defender, Thompson; reserve champion, Pathfinder's Pride, Conejo Ranch.

Junior champion boar — Orion's King Gano, Graham; reserve champion, Ireland's Cardinal Model, Ireland Ranch.

Grand champion boar — Thompson's Pilot Defender, Thompson.

Senior champion sow — Critic's Rose, Conejo Ranch; reserve grand champion, Ireland's Maid, Ireland Ranch.

Junior champion sow—Ireland's Maid, Ireland Ranch.

Grand champion sow — Critic's Rose, Conejo Ranch; reserve champion, Ireland's Maid, Ireland Ranch.

Aged herd—1, Conejo Ranch; 2, Conejo Ranch.

Young herd—1, Ireland Ranch; 2, Hewitt; 3, Thompson; 4, Graham; 5, Conejo Ranch.

Herd bred by exhibitor — 1, Ireland Ranch; 2, Hewitt; 3, Thompson; 4, Conejo Ranch; 5, Graham.

Get of boar—1, Get of Critic D, Conejo Ranch; 2, get of Golden Model, Conejo Ranch; 3, get of Great Model, Ireland Ranch; get of Cherokee Disturber, Hellman; 5, unnamed, Thompson.

Produce of sow—1, Produce of Cardinal's Lady C, Ireland Ranch; 2, produse of Golden Cherry, Hewitt; 3, unnamed, Thomnson; 4, produce of Pioneer Queen, Hellman; 5, unnamed, Conejo Ranch.

Barrow, any age—1, Ireland Ranch; 2, Graham; 3, Graham; 4, Graham; 5, Conejo Ranch.

Three barrows, any age—1, Graham; 2, Conejo Ranch.
Best display by exhibitor—1, Conejo Ranch.

The Hampshires

There isn't another fair in the West that can marshal a display of Hampshires the equal of those shown at the Liberty Fair . Six herds were in the pens and they were all high class herds. For the most part the awards were participated in rather evenly.

Llano Vista headed the aged boar class with Langdon's Choice. The other four boar classes were divided. Conejo Ranch was to the front with their good lot of aged sows, but Llano Vista managed to land second. Denker had the edge in the young sow classes, and landed the sow championships, while Llano Vista had the boar champions. Judge Doty made the awards.

Exhibitors: Conejo Ranch, Newbury Park; Llano Vista Ranch, Perris; Roy Dawson, Gardena; C. J. Gilbert, Lancaster; F. C. Fairbanks, Redlands; L. A. Denker, Saugus.

Aged boar—1, Langdon's Choice, Llano Vista Ranch; 2, Oro, Dawson; 3, The Harvester Again, Gilbert; 4, Conejo Chief, Conejo Ranch.
Senior yearling boar—1, Duke's Allen, Conejo Ranch.
Junior yearling boar — 1, Harvey's Choice, Fairbanks; 2, Maloy's Controller, Denker; 3, Zodiac Wonder, Denker; 4, Authority, Conejo Ranch.
Senior boar pig — 1, Liberty, Llano Vista Ranch; 2, Leading Chief, Conejo Ranch; 3, Direct Kid, Denker.
Junior boar pig—1, Director Jr., Denker; 2, Maloy's Pride, Denker; 3, Tip Top, Denker; 4, Walter G, Llano Vista Ranch; 5, Gay Allen, Conejo Ranch.
Aged sow — 1, Leading Wave 2nd, Conejo Ranch; 2, Compeer's Descent, Llano Vista Ranch; 3, Leading Wave 3rd, Conejo Ranch; 4, Elmyra 2nd, Conejo Ranch; 5, Direct's Model, Llano Vista Ranch.
Senior yearling sow — 1, Wavelet, Conejo Ranch; 2, Corinna, Llano Vista Ranch; 3, Alta, Llano Vista Ranch; 4, Duchess, Fairbanks; 5, Perfect Quality, Conejo Ranch.
Junior yearling sow—1, Little Mesa, Denker; 2, Senorita, Conejo Ranch; 3, Fern, Llano Vista Ranch; 4, Beauty Mesa, Denker; 5, Second Echo, Gilbert.
Senior sow pig—1, Dearie, Denker; 2, Chief's Wave, Conejo Ranch; 3, Winnie, Llano Vista Ranch; 4, Chief's Wave 3rd, Conejo Ranch; 5, Judith, Liano Vista Ranch.
Junior sow pig—1, Allen's Idol, Conejo Ranch; 2, Wildflower, Denker; 3, Twin Oak, Denker; 4, Do Do, Denker; 5, Martha Allen, Gilbert.
Senior champion boar — Langdon's Choice, Llano Vista Ranch; reserve senior champion, Harvey's Choice, Fairbanks.
Junior champion boar—Liberty, Llano Vista Ranch.
Grand champion boar—
Senior Champion sow — Little Mesa, Denker; reserve senior champion, Leading Wave 2nd, Conejo Ranch.
Junior champion sow—Dearie, Denker; reserve junior champion, Allen's Idol, Conejo Ranch.
Grand champion sow — Little Mesa, Denker.
Aged herd—1, Llano Vista Ranch; 2, Conejo Ranch; 3, Denker; 4, Gilbert.
Young herd—1, Denker; 2, Conejo Ranch; 3, Llano Vista Ranch; 4, Dawson; 5, Fairbanks.
Herd bred by exhibitor—1, Denker; 2, Conejo Ranch; 3, Llano Vista Ranch; 4, Dawson; 5, Fairbanks.
Get of boar—1, Conejo Ranch; 2, Denker; 3, Llano Vista Ranch; 4, Gilbert; 5, Fairbanks.
Produce of sow—1, Conejo Ranch; 2, Denker; 3, Gilbert; 4, Fairbanks; 5, Dawson.

The Poland Chinas

When the Bassett herd from Hanford meets the Hartsook herd (recently purchased from H. I. Marsh, Modesto) from Lankershim there is certain to be a hog show, even if there is a bit of difference in the type. That is for the judge to worry about—and J. L. Thatcher, who tied the ribbons, put in his share of worrying but acquitted himself to the satisfaction of all. Just to make things a bit more interesting, Hale Marsh put in some young things of his own.

In the aged boar class, the general scale, good back and feet, carried E. B. A. Wonder to the top over the Bassett entry, Orange King. In the senior boar pig class two distinct types were placed before the judge and in his selections he looked for size combined with quality. The seven junior boar pigs gave no end of worry to the judge, who finally picked his four tops from the Bassett herds and his fifth from the Marsh herd. The four aged sows of Hartsook's were so outstanding that the principal question was to align them correctly.

The really hard class of the show was the senior sow pigs and so close were the tops that the judge asked that the class go over until morning when the better light would help him decide.

Poland-China awards next week.

Chester White Swine

F. T. Spoor of Compton was the only exhibitor of Chester White Swine.

FAT SWINE, CAR LOTS

Exhibitors: Donald H. Graham, Lancaster; Conejo Ranch, Newbury Park.
1, Graham; 2, Conejo Ranch.

SINGLE STEERS

Exhibitors: Congdon & Battles, North Yakima, Wash.; Curtice Cattle Co., Calgary; Hereford Corporation of Wyoming, Cheyenne, Wyo.; T. T. Miller, Los Angeles.
Steer or heifer, one and under two years—1, Black Yak, Congdon & Battles; 2, Beau Donald 212th, Curtice Cattle Co..
Steer or heifer under one year old—1, Cheyenne, Hereford Corporation; 2, Introduction, T. T. Miller.
Champion steer or heifer—Black Yak, Congdon & Battles.

A NEW HOG PRICE AGREEMENT

Pork producers will be interested in following communications just received from the live stock commission of the federal food administration for California. This new agreement means that Coast markets will continue to rule one cent under Chicago prices for the months of December, 1918, and January, 1919. The Chicago price for December is 17½ cents per pound for average packers' droves, thus making the Coast minimum, for average droves, 16½ cents. Producers should refuse to accept less than the minimum price, and if local conditions do not warrant their receiving this price, they should ship to San Francisco or Los Angeles.

To the Packers and Pork Handlers of California:

On November 18 a conference was held in Washington with the meat division of the food administration and the representatives of the division of coordination of purchase with reference to the price to be paid for hogs in California by those purchasing from the producer.

It was the unanimous agreement that the producer in California should receive the Chicago price less one cent and the division of coordination of purchase and the meat division authorized notification of this fact and requested that any deviation from this price be immediately reported to them.

The accompanying letter of the live stock commission is in complete accord with the policy of the food administration, and the authorities at Washington have empowered the live stock commission for California, through the federal food administrator, to speak as the local representative of the national food administration. Ralph P. Merritt,
Federal Food Commissioner for California.

To Licensed Packers of California:

A meeting of the majority of the California signers of the agreement with the food administration dated January 21, 1918, relative to price for hogs, was held at the offices of the federal food administration on Saturday, November 23, 1918.

Several representatives of packers and slaughterers discussed the results of the operation of such agreement upon their business, especially in regard to the accumulation of lard and certain cuts upon the Pacific Coast, and it was agreed that a meeting of packers with the live stock commission of the food administration at which representatives of the swine breeders should be present, would be held early in January, 1919, to consider a price policy for that year's farrows.

The food administration maintains that this agreement of last January with the Pacific Coast packers is in force and it is the understanding of the conference that the licensed packers will fully observe the terms of such agreement for the months of December, 1918, and January, 1919, the agreement being as follows:

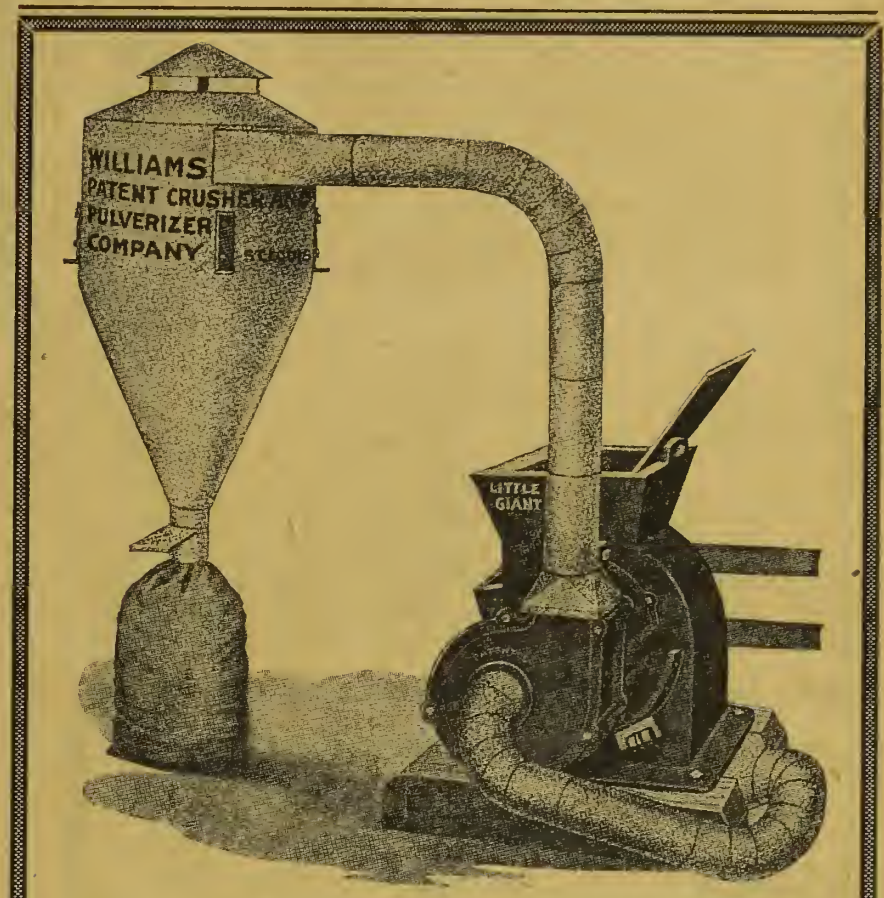
"The food administration adopts the following minimum policy for the period during which similar minimums are in force by the Middle West:

"The average price of packing hogs bought by the packers at all terminal points in California will not be less than one cent under the food administration minimum effective on the Chicago market (such Chicago minimum is 17½ cents per pound for the month of December, 1918). Any packer may make it a condition for the maintenance of the minimum, that he shall charge any loss of condemnation by federal or municipal inspection to the raiser or shipper."

United States Food Administration for California.—Live Stock Commission.

The new Gustine Cooperative Creamery with its 100 patrons has been in operation about one year and is now handling from 2600 to 3000 pounds of butter fat per day.

4 Duroc Jersey 4 BOARS
and some splendid gilts for sale
Fair Prize Winners. Write
W. M. Way Modesto, Route 1, Cal.



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Send for Bulletin 199-A
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Economy Stock Powder

fed regularly to sheep will keep them free from worms. It also acts as a tonic, a laxative, a blood purifier and as an aid to digestion cannot be improved upon. Will eliminate BLOAT and ALL AILMENTS COMMON TO SHEEP.
SEND FOR A FREE SAMPLE.
Economy Hog and Cattle Powder Company
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HEREFORDS
A large herd of selected stock to choose from.
Everything sold is guaranteed as represented.
Why send East for breeding stock when we can supply your needs?
Save time and money by writing us for particulars.
Cottrell & Packard, Tempe, Arizona
Members Pacific Coast Hereford Breeders Association

LONE STAR Registered Herd ★ **HEREFORDS Unregistered Herds**
800 Cows and 50 Bulls Best of Breeding Show Winners. 4000 Head Both Sexes Same Breeding as Registered Herd
All stock guaranteed as represented. Write for terms and particulars. We offer for immediate delivery, 200 two year old bulls, 200 yearling bulls, and 600 heifer calves. Thick coats, good color, and markings.
Scharbaur & Eldson, Midland, Texas Elevation 3000 Feet

PURE BRED REGIST'D HOLSTEINS

Tuberculin Tested State Supervision Production Butter Fat Everything Guaranteed

King Korndyke Pontiac

(shown above)

by every right of inheritance should transmit great production and high class type. His sons and daughters have already proven his ability to transmit type of the first rank—daughters with the big, deep bodies and the ample, fine textured udders that go with large dairy production. As for his sons, one of them sold for $6500.00 at public sale, going to head W. J. Higdon's fine herd at Tulare.

Two daughters of King Korndyke Pontiac recently freshened in our herd and made very satisfactory records. King Korndyke Pontiac Charlotte, under official test made 22.92 pounds butter in seven days as a junior three year old. Natoma Superba Pontiac, freshening at two years four months, made 19.25 pounds butter in seven days. We have several other of King's daughters to freshen this winter and they look especially promising.

You need one of his young sons in your herd. Come and see what we have on hand or write for pedigrees and prices. We make liberal terms if desired.

Prince Gelsche Walker Kornkyke

(shown below)

JANE GARDEN FARM

SACRAMENTO — CALIF.

FRED W. KIESEL PROP'R. C. W. YOUNG SUP'T.

Individuality Breeding

"He Has Developed Wonderfully"

Is the universal statement of all who saw our great junior herd sire

King Korndyke Pontiac 20th

when we bought him as a calf, and who again saw him out on the show circuit this year, where at California State Fair he was defeated in class only by the twice grand champion bull.

The way he is deepening and lengthening out, and the splendid vigor which he possesses, are most pleasing to us, as he is doing even a little bit better than we expected of him.

And his first calves that are now coming are certainly beauties. It is not too early to begin to figure with us on one of his young sons for your herd. Come and see them or write for description and price of one.

NOTE: We are selling some choice, highly bred cows and heifers bred to King Korndyke Pontiac 20th in the Tulare Sale, November 20-21.

Our Entire Herd is Tuberculin Tested

Tulare Holstein Farm

W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

Santa Anita Rancho

Anoakia Breeding Farm

REGISTERED HOLSTEINS

A herd of fine individuals, strongly bred in the lines of great production as evidenced by both short and long time records, handled in a manner to produce sound, healthy breeding stock.

Merci Lad Korndyke Burke

Son of De Kol Hengerveld Burke who has a long list of A. R. O. daughters with records up to over 35 pounds butter in seven days, and out of Winnie Korndyke Cornucopia De Kol who made 31,034.1 pounds milk in one year and was the first cow in California to make over 1200 pounds butter in one year. A few of his good sons out of excellent dams for sale.

SANTA ANITA RANCHO *Santa Anita, Cal.*

Anita M. Baldwin, Owner *W. H. Taylor Supt.*

Alfalfa Will Replace Bran

ASIDE from labor, and the general high price of feed stuffs of all kinds, perhaps no single problem has given the dairyman more concern than the question of securing bran or a feed that could satisfactorily be substituted for bran.

The Nebraska experiment station has recently made public the results of a feeding trial in which finely chopped alfalfa was compared with bran.

California dairymen will doubtless be interested in the Nebraska results which will be found applicable to Pacific Coast conditions and, if applied, will go far toward relieving a situation that promises to continue for sometime.

The Nebraska station report follows:

The problem of reducing the cost of the ration for the dairy cow is of much importance. Where roughage may be substituted for a grain or by-product concentrate, the cost of the ration is likely to be decreased. Throughout a large part of the western half of the United States alfalfa hay is abundant and comparatively cheap when calculated on its protein or energy units. In the form of alfalfa meal it may be shipped into a large part of the country east of the Mississippi River at a cost much less per ton than the cost of a mill product of like feeding value.

The North Platte substation of the University of Nebraska has conducted an experiment to determine whether chopped alfalfa may be substituted for wheat bran in the dairy cow grain ration of four parts corn, two parts bran, and one part oil meal, and the effect of such substitution on the performance of the cows. The first test extended from December 1, 1916, to January 30, 1917. During this time the cows were fed about 30 pounds silage per head daily and had access to a rack containing alfalfa hay. The second test was begun March 1, 1917, and closed May 30, 1917. The cows were fed silage and alfalfa hay throughout the test and had some grass during the last few weeks. The amount of grain was based on the milk flow—one pound of grain for three to four pounds of milk.

Six pairs of cows were selected for each test. Each pair was matched as closely as possible in respect to breed, lactation period, previous record, milk flow, percentage of fat, and other factors that would be expected to affect production. One cow from each pair was put into Group A, the other cow into Group B. The six cows of Group A were fed a grain ration consisting of four parts ground corn, two parts bran, and one part oil meal during the first period of 15 days, while the six cows of Group B were fed a grain ration consisting of four parts ground corn, two parts chopped alfalfa, and one part oil meal. During the second 15 day period the A group received the alfalfa while the B group received the bran ration. The test was extended through four 15 day periods during two periods of which the cows of Group A were fed the bran ration and the two periods the alfalfa ration. The cows of Group B were fed in a similar manner, only that when the cows of Group A were getting the alfalfa ration those of Group B were getting the bran ration, and when the cows of Group A were being fed the bran ration those of Group B were being fed the alfalfa ration.

During the third period of the first test one cow in Group A, being fed the bran mixture, went off feed for a few days and during the fourth period another cow in Group A, being fed the alfalfa mixture, dropped in production for a few days. As one cow was off when on bran and the other when on alfalfa, these deficiencies do not influence the final results.

During the second test one cow became sick. She and her mate were taken out of the test, leaving only five pairs of cows.

Results of the First Test

The six cows in Group A while on the bran mixture during two 15 day periods gave 3972 pounds of milk containing 144.3 pounds of butter fat; and lost 32 pounds in weight. The same six cows while on the alfalfa mixture during two 15 day periods gave 3952 pounds of milk containing 138.7 pounds of butter fat, and gained 233 pounds in weight.

The six cows of Group B while on the bran mixture during two 15 day periods gave 4244 pounds of milk containing 158.4 pounds of butter fat, and gained 128 pounds in weight. This same group of cows while on the alfalfa mixture during two 15 day periods gave 4332 pounds of milk containing 163.6 pounds of butter fat and gained one pound in weight.

Bringing together the results from both groups we find that the 12 cows while eating the bran mixture during two 15 day periods produced 8216 pounds of milk containing 303 pounds of butter fat and gained 96 pounds in weight. The same 12 cows while on the alfalfa mixture during similar periods produced 8284 pounds of milk containing 302.3 pounds butter fat and gained 224 pounds in weight.

Results of Second Test

The five cows in Group A while on the ration of corn, bran, and oil meal during three 15 day periods gave 7430 pounds of milk containing 250 pounds of butter fat and lost three pounds in weight. The same five cows while on the ration of corn, alfalfa, and oil meal during three 15 day periods gave 7147 pounds of milk containing 245 pounds of butter fat and lost 52 pounds in weight.

The five cows of Group B, while on the ration of corn, bran, and oil meal during three 15 day periods gave 7239 pounds of milk containing 241 pounds of butter fat and lost 125 pounds in weight. The same five cows while on a ration of corn, alfalfa, and oil meal during three 15 day periods gave 7309 pounds of milk containing 239 pounds of butter fat and gained 68 pounds in weight.

Combining the results from the two groups we find that the ten cows while being fed bran with corn and oil meal during three 15 day periods gave 14,669 pounds of milk containing 491 pounds of butter fat and lost 128 pounds in weight. The same ten cows while being fed alfalfa with corn and oil meal during three 15 day periods gave 14,456 pounds of milk containing 484 pounds of butter fat and gained 16 pounds in weight.

Two Tests Combined

Twenty-two cows while being fed a forage ration of silage and alfalfa hay, and a grain ration of four parts ground corn, two parts bran, and one part oil meal during an average period of 75 days, gave 22,886 pounds of milk containing 794 pounds of butter fat and lost 32 pounds in weight. The same cows during a similar period and

der similar conditions, and fed the me ration excepting that chopped falfa replaced bran in the grain ra- n, gave 22,741 pounds of milk con- ining 786 pounds of butter fat and ined 240 pounds in weight.

During these tests with 12 cows for o months and ten cows for three nths, chopped alfalfa was substi- ted for bran in the standard dairy ain ration of four parts ground corn, o parts bran, and one part oil meal without any appreciable unfavorable effect. The slight decrease of 145 pounds in milk and 7.5 pounds in but- ter fat production while the alfalfa was being eaten was more than over- come by the gain of 272 pounds in the weight of the cows. It is evi- dent that in these tests alfalfa was fully equal to bran. If these results are the same as are found in general practice, then alfalfa fed in this man- ner has the same feeding value as bran.

Will Raise Another Pig

Written for California Cultivator By Rupert Hendricks

Because I want to encourage the ys and girls of Southern California raise more pigs to feed our boys ver there," and in that way help win e war. I will write of my pig club perience.

During the latter part of April I pur- ased a Hampshire sow pig that was rrowed in March.

I fed a mixture of barley meal and ran, twice a day for several weeks. he amount was increased from time time until I was feeding three arts of the mixture. Later I changed e feed to rolled barley, soaked over- ght, and fed three quarts three times a day. I afterward changed to a buttermilk feed, fed from a self feeder.

While my pig was small I would let her out on the lawn where she could find plenty of grass. I also had a small patch of alfalfa which furnished green feed. After she grew fairly large I fed her fresh cut Sedan grass.

I showed her at the Southern Cali- fornia Fair at Riverside, and she was placed fifth in the pig club contest.

I have found it very interesting to take care of her and I expect to raise anther pig next year. I am 11 years old.

California Jersey Record Holders

The American Jersey Cattle Club nounces that the following list in- udes the highest producing Jersey ws, owned in this state, in their re- pective classes.

Aged cow — Fern's Silver Ray 5081, 14,692.8 pounds milk; 779.54 unds butter fat.

Senior four year old—Mermaiden's ern 269301, 96571.6 pounds milk; 536.9 unds butter fat.

Junior four year old — Interested ap's Santa 296928, 13,308.5 pounds ilk; 805.72 pounds butter fat.

Senior there year old—Jewel of Venadera 275316, 10,262.6 pounds milk; 609.54 pounds butter fat.

Junior three year old—Pride of Cal- ifornia 314819, 7820 pounds milk; 480.89 pounds butter fat.

Senior two year old—Interested Jap's Santa 296928, 9052.5 pounds milk; 588.16 pounds butter fat.

Junior two year old—Mamie Owl 261075, 7830.3 pounds milk; 435.14 pounds butter fat.

Under two years old—Jewel of Venadera 275316, 8017.8 pounds milk; 442.4 pounds butter fat.

Urges Fish Meal for Hogs

To stimulate greater interest in the roduction of fish meal, which is a ood substitute for tankage in the eding of hogs, E. Z. Russell, in harge of swine investigations for the nited States department of agricul- re, recently visited a number of heries along the Gulf coast as well a number of marketing centers in e South. Tests conducted by the epartment show that fish meal is ual in feeding value to tankage. It ntains about 57 per cent protein. It made by drying nonedible fish and grinding fine. This meal is being used at the government farm at Belts- ville, Maryland, to replace tankage. The menhaden fisheries on the Atlan- tic coast can produce annually 10,000 tons of fish meal. Fisheries along the Gulf states and Missippi River have been wasting or manufacturing as fer- tilizer large quantities of nonedible fish. Mr. Russell's visit to the Gulf states was to investigate the feasibil- ity and to urge the fisheries to manu- facture these nonedible fish into fish meal for swine feeding.

Lice and Hogs

This is the time of year when lice d ticks are apt to be very bad on gs.

In cold weather hogs will not go to mud or wallows, and oil put in e wallows is not effective. We have und nothing more effective than pping in crude oil. For this pur- se we use a vat 24 feet long, three et wide and six feet deep. This vat filled with water and a four to six ch layer of crude oil is put on top. he hogs, big and little, are run rough this oil and water and come t thoroughly covered with oil.

We have heard people say that it is d to put hogs through a dip in cold eather, but we have dipped hogs all rough the winter months for several ars, and have had no bad results. he heat of the hog's body melts any rplus oil and the animal does not ill.

The oil not only kills the lice and ticks, but kills the "nits" or eggs, and leaves the hair soft and glossy.

If one is not equipped with a dip- ping vat the crude oil can be applied with a brush or broom, care being tak- en to apply plenty of oil along the back and behind the ears.

We plan to dip our hogs every two weeks, winter and summer, and it would seem that by practicing regu- lar dipping that lice and ticks would finally be eliminated—but it does not work out that way. These pests seem to be everywhere and the only way to keep from feeding them valuable hogs' blood is to dip at regular and frequent intervals.—W. S. G.

A four day tractor demonstration will be held near Fresno December 18, 19, 20, 21 under the management of the Central California Tractor As- sociation. Fifteen tractor firms will participate.

N. W. Thompson Imported and American Bred

Percheron, Belgian and Shire Stallions

My new shipment of Stallions has arrived consisting of Percherons, Belgians, and Shires personally selected by me from the best breed- ing sections of Iowa, Illinois and Indiana.

Two, three and four year olds that weigh a ton or better. The heavy boned, clean legged kind with lots of style and action.

The largest collection of high class Stallions west of the Rocky Mountains.

Prize winners at this year's big Eastern shows. Life Insurance and State Certificate of Soundness furnished with every horse. If in need of a really high class Stallion come and inspect my horses or write for full particulars. I can suit you in price, quality, and terms.

N. W. Thompson

Patterson, Stanislaus Co., Cal.

Ranch Adjoins Town

Hollow-Hill Farm Guernseys

On account of his close relationship to the balance of our herd we are go- ing to sell our JUNIOR HERD SIRE, the four year old bull

Cora's Glen 31541

Grand Champion at Riverside County Fair in 1916

His sire is an A. R. bull which has two A. R. daughters.
His dam has an A. R. record of 12,286.3 pounds of milk and 676.31 pounds of butter fat, average 5.5 per cent, made at ten years of age.
He combines the blood lines of many of the great members of the breed and traces 25 per cent to Imp. Masher's Galore and 12½ per cent to Governor of the Chene.
He is a show bull and is backed up by production records. Inquire of

Hollow-Hill Farm, Colton, Cal.

Bull calves at reasonable prices.

CALIFORNIA CHAMPION HAMPSHIRES

As good as the best and better than the rest. A boar or a sow pig sired by my great herd boar Director, and out of one of my choice sows will add prestige to your herd. I am booking orders now for the pigs of March and April farrow. Write now and place your order.

L. A. DENKER

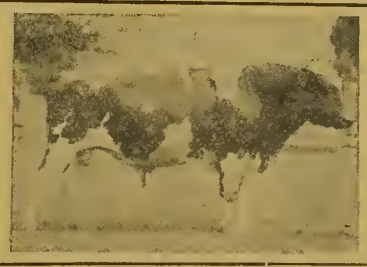
Boquet Canyon **Saugus, Cal.**

Sir Aaggie De Kol Acme 2nd

Five of his seven nearest dams average:
Milk one year....24,089.88 pounds
Butter ..... 1,105.07 pounds
This butter average is equalled by only one other bull of service age in the world. Buy your next bull from

Eldorado Herd

Alex. Whaley, Owner Tulare, Cal.



Prince Hiske Walker

He is by Prince Gelsche Walker and out of Hiske of Riverside, being there- fore full brother to Lady Hiske Walker, 34.25 pounds butter in seven days as a junior four year old, former state record in class.
His offspring are uniformly straight, vigorous, and well marked. A few of his young sons for sale.

Packwood Farm

W. F. Mitchell, Owner *Visalia, Cal.*

Shorthorn Cattle and Berkshire Hogs

Shorthorn herd headed by Count Glory 426982, grand champion at the California State Fair, 1916. Berkshire herd won Premier Exhibitor's banner at P. P. I. E.

513 Hearst Building ***San Francisco***

CARRUTHERS FARMS ***Live Oak, Cal.***

Creamcup Holsteins Headed by the 33.92 pound bull Creamcup Champion Pontiac Burke. A few young bulls for sale. M. M. HOLDRIDGE, Rt. A, Box 437, San Jose, Cal.

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FARM LANDS FOR SALE

Seven and one-half Acre Prune Orchard for sale. 1 mile from Sonoma City, soil rich, black loam, no adobe, never packs; trees are in A-1 condition; family orchard near house which furnishes fruit from June 1 to Xmas; tank house; new engine; well 300 feet deep; plenty water; barn; beautiful grounds; shade; good 8 room house well built; $2000 crop this season; next to state highway; price $10,000; $6000 cash lowest figure; no exchanges. Box 125, Sonoma City, California. Trays and dipper.

For Sale — One of the Big Producing Ranches of California, income from $20,000 to $25,000 per year. Will sell land, crop, work stock, cows and farming implements for $60,000. Small cash payment to apply on personal property, balance about one-half of the value of crop. Might accept clear Los Angeles residence or income, apartment house or small grove as first payment. Address W. B. Ames, Jonathan Club, Los Angeles, California.

Land In Owens Valley—I want a few men to go in with me and buy 640 acres of land and divide the land. We have cash for 200 acres now. Land not improved, $80 per acre, with gravity water, improved $110 per acre, bank appraisement. More than that we must buy 640 acres as it is mortgaged. $35 per acre down pays mortgage, balance long time. We are not agents. Address Mr. Beale, 758 S. Spring St., Los Angeles, Cal.

For Sale—10 acres, 626 Valencia oranges, $4000.00 to $8000.00 fruit on; 385 Avocados, mostly Fuerte; 25 miles from Los Angeles on Valley Boulevard. Curbed, cement porches, tennis court, driveway; 11 room house, gas, electricity, domestic water, barn, garages, concreted floors. Irrigating water piped. Going to Arizona for son's asthma. Cash. Box 56, Charter Oak, California.

For Sale — 118 acre Ranch in Imperial Valley, near Calipatria, 60 acres leveled and in crop, good house and corrals, fully water stocked, soft sandy soil, 20 acres good alfalfa. Price $10,000, half cash, balance 10-year terms. Must sell account other business. Write OWNER, Drawer "H," Calexico, California.

For Sale—160 acres in Panoche Valley, California. No better land than this. Silt soil. Grow anything. Especially adapted for Apricots, Prunes, Alfalfa and Almonds. Water can be had from eighty to ninety feet. $75.00 per acre. B. Barshinger, Gilroy, California.

Wanted To Sell, trade or exchange 80 acres of alfalfa land in Imperial Valley, for a dairy having 60 to 80 cows, together with lease on place to keep them. Address Frank C. Dias, Holtville, California.

For Sale—Well improved already stocked sheep ranch near Porterville, California. $6000 cash and $4000 in two years. O. P. Osborn, Milo, California.

SEEDS AND PLANTS

Attention—In order to introduce our sweet Spanish onions, we will sell a few pounds of seed in small packages. The onion from this seed is mild and sweet and has no equal. Seed guaranteed. Orders filled as they come in. Plant December, January or February. Packages 30c. Kirkpatrick-Thompson, Sweet Spanish Onion Industry of California, 669 Eighth St., Riverside, California.

Try Your Luck growing valuable drug herbs. We have a few thousand Atropa Belladonna plants for sale, one year old roots, dormant, $1.00 dozen, $8.00 a hundred, $50 thousand. First come first served. Money must accompany order. Reference, Pajaro Valley National Bank. Herbert-Vistica Co., R. F. D. 3, Box 107, Watsonville, California.

I Will Have One or Two Tons of Sorghum seed, especially selected for syrup making qualities for sale as long as it lasts. Send for list of different varieties, with description, prices and instructions for planting to get best results. Can send seed by parcel post. MARION GRABER, Hawthorne, California.

For Sale—Beardless Barley seed $4.00 per 100 pounds. Hull-less barley $5.00 per 100 pounds. Less quantities 2c higher. H. R. Hanna, Rancho "El Pavo," San Marcos, California.

Strawberry Plants: Klondyke, Brandywine and other varieties. Best plants, quick service. Wholesale and retail. Price list free. V. R. Allen, Seaford-Del.

A Few Sacks Rhodes Grass—Honey sorghum and Sudan seed. Order now all will be scarce and high later. Kelley's Seed House, El Centro, California.

R*O*S*E*S 50c per dozen. Fruit and Ornamental Trees, Plants, Vines, etc. Write for catalogue. KAVAN NURSERIES, San Bernardino, California.

Rhubarb Plants — Wagner's Giant Crimson Rhubarb plants, extra clean, 50 cents per dozen. $3.00 per hundred. Currier Bulb Co., Seabright, California.

FERNS—BULBS—ROSEBUSHES.
Annual and Perennial plants. Write for catalogue. The Hoosier Florists, Escalon, California.

Peruvian and Common Alfalfa Seed—Specialty. Write for prices and sample. Box 501. Fowler, California.

PIPE

"TESTED" and "GUARANTEED" Screw pipe, casing, valves and fittings. Riveted slip joint pipe; all sizes. New and used. "Pacific" pipe for all purposes.
PACIFIC PIPE CO.,
Main and Howard Sts., Est. 1906, San Francisco.

MACHINERY

FOR SALE—
USED RANCH MACHINERY.
Guaranteed to do same work as new. WE SELL FOR LESS. CALL AND SEE.
WINDMILLS, 8-ft., $29 to $35; 10-ft., $39 to $45; 12-ft., $55 to $65; 16-ft. $135; 10-ft., mill with steel tower, $79.
REDWOOD TANKS, new and used, all sizes.
NEW GALV. TANKS, 1000-gal., $42.50; 2000, $56. Used galv. tanks, 4500 gal., $95; 6500, $125; 8000, $140; fine for storing water or oil.
RANCH TOOLS: 10-ft. fine double disc drill, $110; beet drills, $35; 24-disc harrow, $45; broadcast seeder, 2-row bean cult., $45; fine 2-gang disc plow, $75; new 14-in moldboard Rock Island riding plow, $55; Deere 14-in. riding plow, $35; single disc, $48; 3-gang, $85; 4-gang, $110; spike harrows, $10 to $18; new alfalfa cult., $85; new CABLE, 12c; sundries.
PUMPS: Plunger, centrifugal, rotary, typhoon, many sizes, kinds. Cylinders, rods, piping, fittings. DEMMITT CO., UPSTAIRS, 120 N. Main, Los Angeles. Also buy.

For Sale—Bean "TrackPULL" Tractor, A-1 condition, used less than 50 hours. Make an offer. Can be seen quarter mile east of Thermal, California. Reason for selling I am in the Army and need money. Cadet W. F. McIntyre, March Field, Riverside, California.

For Sale — A 12-20 Yuba Tractor; a fine worker and just overhauled ready for the season. Also a La Crosse Jumbo plow nearly new. Have bought larger tractor and outfit is only reason for selling. L. B. Cadwell, Carpinteria, California.

Gasoline Engines, the largest stock of Used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

Trackford for sale, fine condition with Moline plow complete. E. Harrison, Halcyon, California.

For Sale—Sampson Tractor 10x25, overhauled and in excellent shape. Cheap. Geo. E. Small, Terra Bella, California.

TREES

MY "TOP NOTCH"
WALNUT
ORANGE and
LEMON
TREES
now ready for you. Write, phone or call. William Pollard, 1831 S. El Molino Ave., South Pasadena, California. Colorado 1613.

Grafted Walnut Trees—Placentia Perfection and Eureka on northern black roots. Citrus stock one year old from selected fruit bud wood. Also all the leading varieties of fruit and avocado trees. Order your trees early and get the first choice. Geo. M. Ketscher, 702 Orange Ave., Santa Ana. Phone Sunset 229W.

Budded Avocados, Fuerte, Sharpless, Lyon, Dickinson, Blakeman, Puebla. Spinks, Taft, Linda, Rey, Queen, Knight, and others. A fine stock of field grown trees, $2.50 for one, $2.00 each by the 100, 25c per tree for packing. Newbery-Sherlock, 2202 East Colorado St., Pasadena, California.

For Sale—250,000 Homegrown fruit trees. Apricots, apples, pears, peaches, walnuts, etc. All stock guaranteed first class in every respect. You will save money by writing for our descriptive catalogue and low prices. Orange County Nursery Co., Box 235, Anaheim, California.

Plum Stock (P. D.) Immune to crown gall and black knot. Tested by State Pathological Laboratory of Whittier; unites perfectly with prune, plum, peach, almond, apricot and nectarine. Tribble Bros., Elk Grove, California.

For Sale—Yearling Valencia Orange trees. Nothing better on the market. P. H. Ebel, Tustin, California.
TREES, TREES, TREES.
No War Prices.
Cash Nurseries, Sebastopol, California.

Grafted Walnut Trees — Placentia Perfection and Eureka. A careful selection of grafting wood from the best groves of Southern California has been used on best black root stock. C. W. Story, Rivera, California.

Walnut Grafting Wood for sale—Selected Franquette, Mayette, Eureka and Payne, 5 cents foot. Bowman-Kuhn Ranch, San Jose, California.

For Sale — Seed Bed Stock, Orange and Lemon Trees, and Avocado Trees of all standard varieties. Walker-Hubbard Nursery Co., San Fernando, California.

Olive Trees—Mission, Manzanillo. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwacofer, Hemet, California.

Apricots, Peaches and Olives. Good thrifty stock and carefully grown. C. E. MOYER, Hemet, Riverside County, California.

For Sale—Highest grade of Placentia and Eureka walnuts on black root. A. R. Marshall, 1212 N. Ross St., Santa Ana, California.

Bargain in Bartlett Pears. Write to L. J. Eachus, Oak Mound Nursery, Lakeport, Lake County, California.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale: inspection invited.

For Sale—Extra fine two year old Valencia trees with sour root. S. R. Coate, Anaheim.

Walnut Trees—Placentia and Eureka on black root. La Puente Walnut Nursery, Puente, California. Phone 103.

For Sale—8000 Mission and Manzanillo olives, $800 takes the bunch. York Nursery, Highland, California.

ENGINES

Several New and Slightly Used Engines. ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

HOGS

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ANCHORAGE QUALITY
We always have a limited number of specially selected pigs for sale sired by Star Leader, now Grand Champion of the World, or by his son Anchorage Leader II. All pigs are well developed and are excellent value for the price asked. All are cholera immune and the Anchorage Farm guarantee is behind each pig. Write today for full information to Anchorage Farm, Orland, Cal.

BERKSHIRES GUERNSEYS
GRAPE WILD FARMS
A few fall boars left by Royal Superbus —also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
A. B. HUMPHREY,
Escalon, San Joaquin County, California.

Chester Whites—Billiken Brand.
It is time to start breeding for next spring's farrows. Have only 10 yearling boars left. Get one and have a bunch of good, growthy spring pigs. For December delivery have a nice lot of yearling gilts bred for March farrow. Weaned pigs, both sexes. C. B. Cunningham, Mills, California.

Mammoth Poland-China sows—We are offering about twenty tried sow and yearling gilts all sired by the world's champion, Superba, at very attractive prices. They are very large and smooth and possess a world of quality, all guaranteed safe with pig before shipping. Rough's Greenfields, Arlington Station, Riverside, California.

We Pay Cash for Hogs of All Sizes, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170. 3030 E. Vernon Ave., South 2712-J. Los Angeles.

Young Boar by OCK'S Chief Grand Champion Ohio and Indiana last year. Dam by Pathfinder's Perfection by Pathfinder. Sterling Smith, Route 1, Box 220, San Diego.

Mule Foot Hogs, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California, "The Blue Gums."

Duroc-Jerseys—We won more money on Durocs at the State Fair than any other exhibitor. Why not get some of this winning stock? June Acres Stock Farm, Davis, California.

Castleview Berkshires are the typey, modern, quick-growing kind, choicest blood lines. Prices reasonable. Castleview Ranch, Berkshires exclusively, Santa Rosa.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

Masterpiece-Superbus strain Berkshires. Choice stock from prolific breeders. Geo. A. Stingle, San Gabriel. Ranch Garvey Ave., two miles SW. of El Monte.

Carruther's Farm Berkshire Hogs — Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition. Live Oak, California.

Poland-Chinas—A limited number sows, bred to our great boar Model Wonder, big type, straight and right. Dimmick Brothers, Lemoore, California.

Start Right — Registered Duroc-Jersey weanlings. Three for $35. Satisfaction guaranteed. Red Rock Ranch, Glen Ellen, California.

Duroc-Jerseys — We breed the champions. Peter, Lamson & Walker, Devore, San Bernardino County, California.

For Real Good Berkshires, cholera immune, write Frank B. Anderson, Box 724, Sacramento, California.

Greenwood Farm Durocs — "Size with Quality." H. C. Witherow, Palo Cedro, California.

Registered Durocs of the big type—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Orland, California.

For Sale—Registered Hampshire boar 16 months. F. J. Somer, Box 12, Moneta, California.

For Sale—Purebred March Duroc gilts $40 for quick sale. Address W. N. Vandermast, Santa Ana, California.

REGISTERED BERKSHIRES. FAIR OAKS RANCH, WILLITS, CALIF.

BIG TYPE POLANDS
W. H. BROWNING, WOODLAND, CAL.

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For Sale—Pair 6 year old geldings 2500 pounds, $325. Another pair 4 and 5 years old $325. Well broke and true. H. R. Hanna, Rancho "El Pavo," San Marcos, California.

Sixteen Weanlings, 11 yearling mules all from same Jack. Some good horses. If sold soon can be bought reasonable. Chas. Hubbard, Riverdale, California.

GOATS

Largest Herd Swiss Toggenberas on the Coast. 100 grade does bred to my $1000 Buck, Captain No. 256, A. M. G. R. Association, due to kid in February and March, $40.00 each, lots to suit. Crating $2.00 extra. Stamp. Rae P. Williams, Oakland, California.

Milch Goat, half Saanen doe bred to Nubian; has milked 600 days, still at it. $60. Miss B. Stocker, Freestone, Sonoma Co., California.

POULTRY

Baby Chicks for Sale—100,000 S. C. White Leghorn chicks from heaviest laying (Hoganized) stock for delivery every month in the year, at very reasonable prices. Safe delivery of all chicks guaranteed. Shipped safely anywhere West of the Rockies. No money in advance; pay on delivery. Finest hatchery in the world. Established 1898. Further information write Must Hatch Incubator Company, 438 Seventh St., Petaluma, California.

White Leghorn Chicks—Hatched in January and February are money makers, if stock is good and right care given. We are equipped to fill large as well as small orders—and to your satisfaction. Write for special letter on them, also circular describing Brown and Buff Leghorns, R. I. Reds, Barred and White Rocks, Black Minorcas. Price and quality will both please you. Booking orders now—be forehanded. The Mission Hatchery, Box 27, Campbell, California.

Our 200-290 Egg Leghorns, Anconas, Reds, Rocks, Minorcas, Wyandottes, Orpingtons, ducks, clear $5.00 for customers now. Breeders, pullets, chicks. Half booked for January, February, March delivery, last year's prices, many repeat orders. 30,000 capacity, hatcheries full now. James Beeson, Pasadena, California.

Baby Chicks—We specialize on Money Making White Leghorns. High record stock with records that are unimpeachable. Also Brown Leghorns, Anconas, Minorcas, Rocks, Reds, White Wyandottes and Buff Orpingtons. Especially Interesting Circular and Price List ready January 1. B. W. Archibald, Soquel, Santa Cruz Co., California.

Moving Flock 200-Egg Hens into crowded quarters. Will sell 100 laying pullets, hens 50c off. Anconas, Buff, White Leghorns, now $1.50, $1.60, $1.75, clearing $5.00 yearly. Guaranteed to please or money refunded. James Beeson, Pasadena, California.

Baby Chicks—Ready in January. Order early and get the date you want. White and Brown Leghorns, Black Minorcas, R. I. Reds, Barred Rocks. Safe delivery guaranteed. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto, California.

Heavy Laying S. C. Reds—Large vigorous cockerels and yearling males directly descended from New York, Boston, Los Angeles winners, $5.00 and $10.00. Satisfaction or money back. W. M. Marquam, Bishop, California.

Model Poultry Farm — White Leghorn Specialists. Our fifteenth year in business. Baby chix and hatching eggs for sale, also first class breeding cockerels. Our prices are right. W. C. Smith, Prop., Corning, California.

"Eastman's Bred-to-Lay" Hoganized and trapnested Barred Plymouth Rocks. JANUARY Chicks. Eggs, cockerels. Fairmead Poultry Farm, Fairmead, California.

White Leghorn Baby Chix from heavy laying (Hoganized) stock; $15.00 per 100. We guarantee safe arrival. The Pioneer Hatchery, 409 Sixth St., Petaluma, California.

Chix—Barred Rocks, R. I. Reds, Orpingtons, Anconas, Minorcas, Buff, White and Brown Leghorns. Breeding Cockerels. Enoch Crews, Seabright, California.

Blue Andalusian Cockerels—A fine well developed bunch from heavy laying strain. Get your order in early. Prices reasonable. J. R. Huddleston, 342 Edgeware Road, Los Angeles.

Chicks and Hatching eggs from heaviest laying scientifically line bred Hoganized White Leghorns on the coast. Circular free. Waldeck Ranch, Burbank, California.

White Leghorn day old chicks from flock that averaged 174 eggs last year. Chas. K. Hale, Prospect Ave., R. D. 1, Santa Cruz, California.

Black Orpingtons Lay, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, California.

Buff Orpingtons — Five extra fine Buff Orpington Cockerels; also a few pullets. No culls—do not have them. J. J. Dean, Moneta, California.

Baby Chicks, White and Brown Leghorns, R. I. Reds, Barred Rocks. E. W. Ohlen, Campbell, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, Cal.

For Sale — Bailey's Beautiful Barred Rock cockerels and pullets, eggs. R. P. Bailey, Spa, California.

TURKEYS

Eastern Bred Mammoth Bronze turkeys. Being sure my birds will give the usual satisfaction, I guarantee them to be as I represent. If not return at once C. O. D. R. M. Dodge, Stafford Farm, R. D. 2, Box 129, Bakersfield, California.

Bronze Turkeys—Mammoth Bronze Toms and hens for sale. Place orders now before prices advance. Also Collie dogs for herding. John G. Mee, St. Helena.

For Sale—Golden Bronze Turkeys.—Big boned breeding Toms of America's best strain. Eggs in season. M. M. Relman, Planada, California.

For Sale—Mammoth Bronze Turkeys, the Best in the West. Geo. A. Smith & Son, Corcoran, California.

Bronze Turkeys — Mammoth Bronze toms for sale. Eggs in season. E. H. Varley, R. D. 1, San Jacinto, California.

AGRICULTURAL IMPLEMENTS

IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches.
ARNOTT & COMPANY, INC.,
The Yellow Front. Established 1892, 112-118 S. Los Angeles St. Los Angeles.

LUMBER

Lumber-Sash-Doors-Plumbing - Supplies —Building materials of all kinds. New and second hand *A*R.W. shingles 60c per bundle. Send list for estimates. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco.

CATTLE

Guernseys—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., California.

SHORTHORN CATTLE, SHROPSHIRE SHEEP. Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., California. W. P. Dwyer and W. S. Guilford, Owners.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, California.

Registered Shorthorns (beef) calves and yearlings for sale. Both sexes, reds and roans. Choice goods breeding. Fair Oaks Ranch, Willits, California.

Ayrshires (registered) — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn. Phoenix, Arizona.

Jersey Bulls and bull calves. Good individuals from producers. Write or come and select. N. H. Locke Co., Lockeford, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

For Sale—Pure Bred registered yearling Jersey bulls from the best families in the world. Close up. George T. Beckers, 7180 Clarington Ave., Palms, California.

Breeders of Registered Shorthorns—Milk Strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Sunshine Farm Jerseys — Young bull, ready for light service, for sale. E. E. Greenough, Merced, California.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

For Sale—56 head registered Polled Hereford cows with 30 calves at foot, and 1 bull. Gay Owen, Calipatria, California.

REGISTERED JERSEYS FOR SALE. J. R. CARHART, FULLERTON, CAL.

Registered Guernseys for sale. P. J. Weisel, Santa Fe Springs, California.

MISCELLANEOUS

Soil Analysis: Is It Worth While?—Here is an answer that everybody can understand; it gives PRACTICAL RESULTS. It brings the user of abundant returns,—1st, In the saving of fertilizers: 2nd, In increase of his crops; 3rd, In improvement of his groves. I ask everyone whose citrus grove is not doing all that it should do to send for my free new folder (a post card will do) which gives much interesting information on the subject. R. R. SNOWDEN, Agricultural Chemist, 320 Stimson Building, Los Angeles, California. Phones: Office Pico 842; residence West 702.

For Sale: Baled Shavings for poultry men and nursery men, also good for fertilizer, 25c per bale, at our factory, mail orders solicited. Miller Box Manufacturing Co., 201 N. Ave. 18, East 118, Los Angeles, California.

I Ship 10 pounds walnuts for $3.00; 1 box of lemons 45 to 48 for $1.00 prepaid any express office. Have dried prunes and apricots. Ernest Vince, Santa Barbara, California.

Made of Redwood, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

To Reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

For Sale—700 smudge pots in good condition, mostly filled, some extra fuel: $200 for the lot. G. A. Starrett, Rialto, California.

For Sale—500 seven gallon smudge pots, A-1 condition. Apply S. P. Moore, Azusa, California. Phone 234.

WANTED

Wanted—Manager's Position on a modern farm, life experience in all classes of stock, and scientific poultry man, and dairy man with a well equipped farm can get results. Married, aged 48 years. No family, wife experienced in housekeeping, and poultry. Please state all particulars as to living conditions and salary in first letter. Refer. William Hodgson, R. D. No. 2, Box 242, Seattle, Washington.

Wanted—Couple to raise bees, beans and turkeys on my 160 acres near Vista. H. R. Hanna, Rancho "El Pavo," San Marcos, California.

Want to Hear From Owner of Farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

RABBITS

Pine Ridge Rabbitry, Monterey, California. A fine line of Flemish Giants, New Zealand Reds and Long Haired Blacks. All stock guaranteed. Write for particulars.

For Sale—New Zealand Red, Utility and pedigreed stock. Reasonable prices. Stephen E. Banneck, 330 E. North Hicks Street, Los Angeles, California.

Belgian Giants, quick maturing, choice young breeders from pedigreed stock, 3 months, $3.00. 345 Mission Ave., San Rafael, California.

Money in Rabbits
Raise rabbits for us. Will pay $6.00 per pair. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

For Sale — Rabbits, New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.

PATENT ATTORNEYS

Patents that protect are secured through The PACIFIC COAST PATENT AGENCY, INC., Savings & Loan Building, Stockton, California; send for our little booklet on "Patents."

Patents — Copyrights, trade marks and labels registered. Solicitor of American and foreign. James R. Townsend, 712 San Fernando Bldg., Los Angeles. Phones: Home A4619; Sunset Main 347.

FERTILIZERS

Lime—Slaked. Corrects heavy sour soils quickly. H. B. Matthews, 495 Douglas St., Pasadena.

BUSHELS VS. SACKS

The field agent is often asked, "Why does the bureau of crop estimates persist in estimating crop production in bushels, instead of sacks or hundred weight?"

The bushel is the standard unit of measure throughout the United States. Ninety million people in 40 states of the Union think and talk bushels. The bushel measure is definite and congress and the various states have stabilized it, enacting laws specifying the number of pounds of the different commodities legally constituting a bushel. The census figures of crop production have all been reduced to bushels for all commodities for which legal weights have been established, and doubtless will be until a different unit of measure has been adopted.

A sack is not definite and cannot be made so, except by legal enactment standardizing the volume and then in turn standardizing the weight per volume of the different commodities.

The cental or hundred weight is now in general use in buying and selling grain and vegetables and seems quite likely to come into general use in estimating crop production throughout the state.

Oranges and apples are thought about and talked about in boxes, dried fruits in pounds or tons, and it is doubtful if custom will permit of a material change. A big box may hold 30, 40, 50 or even 60 pounds, yet market quotations are often made in lugs, without specifying the size. If the bulk handling of grain ever becomes prevalent, as now seems likely, the sack will largely disappear, particularly as a unit of measure, and the cental or bushel take its place.

Estimates of average yield per acre and total production will undoubtedly continue to be made in busheds for all grains and some fruits, as long as the bushel continues to be the standard unit of measure throughout the United States.

The following weights per bushel are used by the bureau of crop estimates in all estimates of crop production. Paste them up for future reference.

Buckwheat, 48.
Corn (shelled), 56.
Flaxseed, 56.
Onions, 57.
Peanuts, 22.
Potatoes, 60.
Sweet potatoes, 56.
Timothy seed, 45.
Wheat, 60.

Weights Per Bushel

Apples, 48.
Beans (dry), 60.
Clover seed, 60.
Corn on cob, 70.
Oats, 32.
Peaches, 48.
Pears, 48.
Rough rice, 45.
Rye, 56.
Tomatoes, 56.
Barley, 48.

IN THE HALL OF FAME

"Eight bags of cotton! The United States never could have produced such a 'prodigious quantity.' They had smuggled it across from some other country." The custom house officials at Liverpool promptly seized the cotton for duties.

That was in 1784, and in the whole two years following, less than 128 bags of cotton were produced in the United States. The trouble lay, not in the growing of the cotton, but in the cleaning of it. It was a day's work for a negro to pick the seeds from the fluffy white fibres in a single pound of cotton. The work was usually done in the evening, when the tired slaves were prodded and beaten until their quota of fibre was clean. No wonder eight bags seemed a "prodigious quantity."

But about that time a certain Northerner came to the South to teach school and stayed in the South to make a cotton gin. And the next year one negro, with two horse power, was cleaning 5000 pounds of cotton a day. Sone one had told Eli Whitney how much the South needed a machine for cleaning the cotton, and so he had watched the negroes at work until he had formed a plan for such a machine. It was to have a network of wires at such a distance apart that the cotton could pass through, but not the seeds. A set of circular saws with sharp teeth, so arranged that they projected between the wires, would pull the cotton through. Revolving brushes would keep the teeth clean. Such was Whitney's cotton gin, and such, with a few improvements for greater speed and cleaner work, it is today.

We know the story of how the gin was stolen before Whitney had secured the patent. We know how the rivalry of the pirated machines and of the inferior "roller gin" kept the inventor from securing the legitimate profit for his work. When his factory burned and he had to borrow money at 12 per cent interest to start again, his enterprise was doomed to failure. He finally returned to the North where he made his fortune in the manufacture of firearms — while the ungrateful South paid off her debts, increased her capital, and trebled the value of her land by means of his cotton gin.

In the end, however, his country appreciated his contribution. Over his tomb in New Haven is inscribed,

ELI WHITNEY

The Inventor of the Cotton Gin
Of Useful Science and Arts, the Efficicial Relations of Life, a Model of Excellence While Private Affection Weeps at His Tomb, His Country Honors His Memory.

ent Patron and Improver in the So-

THE WAY OF A FIGHTER

Corrigan, Sr. (admiring son in U. S. N. uniform): But why do they make the pants so wide at the bottom, Danny?"

Corrigan, Jr.: So they can be quickly rolled up, dad.

Corrigan, Sr. (warmly): Ye're no son iv mine iv ye're goin' to fight wid yer fate! 'Tis yer jacket sleeves that ought to be wide at the bottom!"—Buffalo Express.

WIREWORMS

Because the destructive wireworms work entirely underground, they are among the most difficult to control of all the insect foes of corn and cotton. Much may be done, however, to lessen their ravages by careful tillage, drainage, and proper rotation of crops, and entomologists of the United States department of agriculture tell how these measures can be put into effect.

Wireworms are the young of the common snapping beetles or click beetles, and the worms are yellowish or brownish, highly polished and slippery to the touch. They move actively and disappear rapidly when brought to the surface by the plow or spade. The eggs are laid in the ground, usually in the sod lands, and here the young worms are hatched. Three years are required for most kinds of wireworms to get their full growth and become beetles.

Some kinds of wireworms live only in land that is poorly drained and for this reason tile drainage of land is beneficial, especially where the general condition of the field is further improved by application of lime and by thorough cultivation.

In the Northwest and northern Middle West the dry land wireworm is sometimes very injurious. The following methods have been found to be valuable in the eradication of this pest: Disk or drag harrow the summer fallow as soon as possible in the spring, in order to produce a dust mulch and thereby conserve the accumulated winter moisture; continue the disking as often as is necessary in order to maintain the mulch and keep down the weeds; plow the summer fallow and immediately drag; plow the stubble as soon as the crop is removed.

The sugar beet by-products, tops and pulp, are of high value for stock feeding purposes. Arrangement should be made, therefore, to utilize the sugar beet by-products as an aid in producing an extra supply of meat and dairy products. Every pound of beet tops or pulp utilized for stock feed will save a certain amount of grain and other feed required for meat and dairy animals, or will increase the meat and meat products output if properly used.

Monarch Cultivator

Killefer Quality

The Killefer Monarch Cultivator has more varied uses on the ranch than any other tool we manufacture. As a Beet and Bean Chisel it has no equal. As an Orchard Cultivator, where deep cultivation is desired, it gives perfect satisfaction.

As an Alfalfa Cultivator, when fitted with our Special Alfalfa Tooth, it does excellent work, loosening the ground to a depth of from six to eight inches without injuring the stand. This deep cultivation enables the water to percolate to a greater depth than any cultivator on the market. Made in 5, 6 and 8 foot size.

Order a Monarch and make us prove our statements.

The Killefer Manufacturing Company
2209-21 Santa Fe Ave. Los Angeles, Cal.

Dr. LeGear's Poultry Powder

Get more eggs

This is the slacker season for hens. They need boosting. Give them Dr. LeGear's Poultry Powder. It will tone up their systems, *put more of* the feed into flesh, and stimulate the egg-producing organs.

I Guarantee Better Layers

if you use my Poultry Powder, because I know that it contains the best scientific ingredients to condition hens and make them lay. It is my own prescription, from 26 years actual experience as a poultry raiser and Veterinarian. Thousands of poultry raisers have proved that hens given my Poultry Powder *lay more* eggs.

You Pay For Results Only.

Get a package of my Poultry Powder from your dealer today, and use it according to directions. If it fails to do all that I claim for it, I authorize the dealer to refund your money.

FREE SAMPLE—Ask Your Dealer.

Dr. LeGear's Remedies are sold by 40,000 of the best dealers—never by peddlers. Ask your dealer today for liberal *free sample* package of Dr. LeGear's Stock Powders or Dr. LeGear's Poultry Powder, and get a free copy of Dr. LeGear's Stock and Poultry Book. If your dealer hasn't the samples and books, ask him to write us for them. We will supply him promptly.

Dr. L. D. LeGear Medicine Co.
768 Howard Street, St. Louis, Mo.

"A dip in time saved mine"

Harness rots because the natural oils of the leather fiber dry out, and dust, sweat and moisture get in and cause rot. Eureka Harness Oil takes the place of the natural oils and keeps rot out—keeps harness strong, flexible and jet black. No animal oils in "Eureka"; rats, mice and other rodents dislike it and won't gnaw harness dressed with

EUREKA HARNESS OIL

MADE BY STANDARD OIL COMPANY (CALIFORNIA)

Alfalfa Seed

Common Variety 21c. per lb. Smooth Peruvian 30c. per lb.
Hairy Peruvian 40c. per lb.

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Delivery to You by Prepaid Freight

Delay Buying Until You Have Compared My Samples With Seed Others Offer

E. F. Sanguinetti Yuma, Arizona

Hauser's Digester Tankage

GIVES GREATEST VALUE FOR LEAST MONEY
IT MAKES THEM FAT

Hauser Packing Co. Los Angeles

THE GARDEN BEAUTIFUL IN CALIFORNIA

by Ernest Braunton

Is a thorough treatise on soil preparation and cultivation and general care of flowers, plants, ornamental trees and shrubbery. Its 14 chapters with half tone and line illustrations and binding in silk make it a work that every home should possess.

$1.00 Postpaid
$1.75 with Cal. Cultivator one year. **Cultivator Pub. Co.,** 115 No. Broadway Los Angeles, Cal.

A Year's Experience With Turkeys

Written for California Cultivator By Bertha Dunlap

MY EXPERIENCE in raising turkeys this year was not altogether satisfactory and I give it in hopes that other beginners may be helped and that I may also receive some information.

I read from one authority that "A year's experience in turkey raising was worth more than any information derived from books." Perhaps so. But where I was ignorant the experiment hasn't always provided the information.

Early in January one of my most valued hens, without previous warning in the way of eggs, began setting and she has continued to set nearly constantly ever since. We kept trying to break her up until the last of March, when she laid four or five eggs and promptly began to set again.

By the middle of April we gave up in despair and set her on some turkey eggs that would hatch May first. She proved a good mother for a few weeks and then rather than lay she went to setting again. It seemed impossible to break her up, so this fall we gave her some chicken eggs to hatch in order that her efforts would not be wasted. By the time they hatched she was ready to quit setting, but since laying another batch of eggs she is in the coop for wanting to set.

I paid a good price for her last Christmas as she was of good stock and a large bird, but as a layer she proved a failure.

I had 12 selected hens from good stock and a fine tom of the Mammoth Bronze, but all were young. The eggs were medium to very large, fertile and hatched into extremely large poults. The poults would thrive for a week or two, then they would suddenly droop, refuse to eat and die.

We couldn't see that anything was wrong with them, and after trying different remedies without success there seemed to be nothing we could do. We tried different foods in trying to fi a remedy, but with the same resul except when we mixed corn meal wi the curd it gave them bowel troubl The last two hatches, which were fe in numbers, we fed eggs and chees and never lost one. The little turk could help themselves to green clove and grass, but later I found out th it was best to grind the green fe and mix it with the mash, otherwis they wouldn't get enough. A commo kitchen food chopper is sufficient.

They also need lots of meat scrap blood and bone with the eggs an cheese. It takes a large amount cheese even for 100 poults. I had trouble from over-feeding as I neve lost a turk from liver trouble but hav all large healthy birds.

I had a great deal of trouble kee ing the poults with the mother he They never seemed to know her an would run with any hen that tried t coax them off, or even the gobble who was interested in helping wit them. After the hens went on th roost the gobbler continued to hov the little ones at night. A few turk I raised with chicken hens and the gave less trouble about mixing wit the others and they soon learned t know their foster mother.

My hens were all laying so wel with the one exception, that I did n notice that they were hiding the nests out until the grain was so hig that I couldn't find them. This course entailed quite a loss as som were only setting on eight and nin eggs, their second clutch, and whe cutting the grain the nests and eg were badly destroyed. Since then know that the hens should be confine until afternoon during the laying se son and not allowed to steal the nests out.

This year I am going to keep m yearling hens and tom and purcha old stock, instead of depending young hens as so many people do.

National Egg Laying Contest

By T. W. Noland, Director

This is the October and final report of the Seventh National Egg Laying Contest held at Mountain Grove, Missouri:

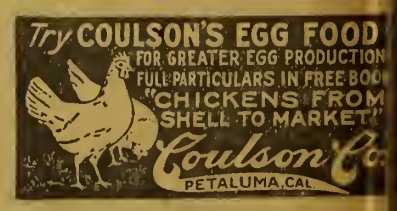
Pen 36, S. C. White Leghorns, owned by C. J. Labahn of Benld, Illinois, won the honors for the year with a record of 1171 eggs to their credit, averaging 234.2 eggs per hen, beating their nearest competitor 46 eggs.

Ninety-three hens, 31 per cent, laid 200 eggs or more during the year. The 300 hens averaged 171.86 eggs each during the year. The high hen, a White Wyandotte, laid 286 eggs, tying the previous high individual record of 1913-14, or third contest. The 300 hens in the sixth or previous year's contest averaged 175.2 eggs per hen per year fed on a perfect egg ration.

War Ration

The results of this, the seventh contest, prove that hens bred to lay will produce a high average although fed what necessity compels, the most available ration at hand. During the life of the contest the hens were fed a war ration consisting principally of corn chops as a grain feed. Each bird consumed 41½ pounds of corn chops, five pounds of wheat and 42 pounds of mash, making a total of 87½ pounds consumed by each bird for the year. The mash ration used in th contest was as follows: Twent pounds shorts, 20 pounds bran, pounds ground oats, 20 pounds co meal, 26 pounds beef scraps. Th birds were fed this mash moisten in the mornings, what they wou clean up by noon, and the same ma was kept dry in the hoppers befo the birds at all times. The grain w fed principally at night—all that th would clean up. The wheat used this contest was of a low grade an could not be used for bread purpose

The cost of keep per hen was $2. for the year. The gross receipts p hen were $5.75 per, year, leaving



$1 FOR EGGS My Valua Poultry erature FRI Tells how double production. Results of years of Successful Experie with Hens. I tell you how to market eggs at high prices. Send quick while egg price is up, and get be fit of long experience in Egg Production and Marketi A. E. WOODALL 691 Globe Building, Minneapolis, M

Chickens Sick?—Use Germozo Roup, colds, bowel troubles, sore head, limber neck, At dealers or postpaid 75 cts. with 5 book Poultry Libra GEO. H. LEE CO., Dept. 418 OMAHA, NE

ofit over the cost of feed of $3.11 per n per year.

ie Contest

Pen 36, S. C. White Leghorns, Missuri, won the $50 cash and silver cup laying 1171 eggs for the year, an erage of 234.2 eggs each. Hen 1, n 47, White Wyandotte, won the lividual prize by laying 286 eggs.

The winning pen in each variety as follows: S. C. White Leghorns, 71 eggs; R. I. Whites, 1125; White yandottes, 1120; Anconas, 1099; rred Rocks, 1099; S. C. Reds, 1089; ver Wyandottes, 1009; Buff Wyantes, 1002; White Rocks, 988; Buff pingtons, 954; R. C. Reds, 922; ack Orpington, 890; Buff Rocks, 826; C. Brown Leghorns, 809; White Orngtons, 748.

The winning individuals of each vaty for the year follows:

White Wyandotte, Missouri, 286 gs; Barred Rocks, E. C. Foreman, 8; R. I. White, 268; White Rock, F. Kneedler, 261; Ancona, Missouri, 7; Buff Wyandotte, J. E. Garrison, 4; S. C. Red, W. A. Magruder, 256; C. Red, Missouri, 253; S. C. White ghorn, Missouri, 248; S. C. Brown ghorn, Missouri, 246; Buff Orpingn, S. C. Fellows, 236; Silver Wyantte, Wm. Neiers, 231; Buff Rock, issouri, 229; Black Orpington, Missuri, 209; White Orpington, Robert Iten, 190.

STORRS EGG LAYING CONTEST

Storrs, Connecticut, November 28, 18.—Report for the week ending ovember 28:

The low temperatures prevailing ring the past week have no immeately apparent unfavorable effect pullet egg production if the egg eld of the birds in the laying contest Storrs may be taken as a criterion. uring this seven day period, the 1000 rds have laid a total of 1218 eggs, hich is at the rate of 17.14 per cent. we compare the heavy breeds with e Leghorns with respect to their te of output, we find that the Legrns were laying at the rate of 21.5 r cent for the week while the corsponding per cent production for e heavy breeds was only 13.1. Without another month, however, we may rmally expect the heavy breeds to rge ahead and then to maintain the per hand until about the first of ril.

A pen of White Leghorns belonging D. Tancred of Kent, Washington, hich won first honors for the third eek, was again in the lead with a oduction of 44 eggs.

The three best pens in each of the incipal varieties are as follows:

arred Plymouth Rocks

Samuel M. Monks, 69; Ingleside rm, 56; Rock Rose Farm, 45; Oren Agricultural College, 45.

hite Wyandottes

Obed G. Knight, 127; O. L. Magrey, ; Laurel Hill Farm, 74.

node Island Reds

Laurel Hill Farm, 118; Deer Brook oultry Farm, 70; Jacob E. Jensen, 55.

hite Leghorns

D. Tancred, 137; Wm. L. Gilbert ome, 113; L. E. Ingoldsby, 111.

iscellaneous

Oregon Agricultural College, Oreons, 54; H. A. Wilson, White Rocks, ; S. Bradford Allyn, White Rocks,

POULTRY SHOW AT LOS ANGELES

Next week, Tuesday the 17th opens Los Angeles the 21st annual show the Los Angeles Poultry Association, the fourth annual State Breeders' Show and the 7th annual of the Los Angeles Pigeon Club. The shows continue through the entire week.

During the same week will be held the annual meetings of the United Ancona Club and the International S. C. Black Minorca Club.

The judges are: O. L. McCord, Peoria, Illinois, Rhode Island Reds, Orpingtons and Minorcas; Capt. Harlo J. Fiske, Leavenworth, Kansas, Leghorns, Andalusians, Campines, Sussex, Dorkings, Polish and Hamburgs; W. M. Coats, Vancouver, British Columbia, White Rocks, Anconas, Cornish and Games, all bantams and water fowl; W. S. Russell, Concord; Barred, Partridge, Buff, Columbian and Silver Penciled Rocks, all Wyandottes, all Asiatics, W. F. Black Spanish, Houdans and all turkeys.

ARIZONA WILD TURKEYS CANNED

A canning demonstration was given during the latter part of June at Payson and Pine in Gila County by Home Demonstration Agent Florence Sandige. At both demonstrations the housewives were shown how to can vegetables and meats, as well as fruits, by the cold pack method. As there was very little fruit in the districts, special talks were made on the importance of canning vegetables and meats for practically none had been canned in that locality. A week ago a survey was made of how much had been canned and the following results were found: Payson had canned over 9000 quarts of vegetables, meats and fruits; Pine, a settlement of about 30 families, had canned over 10,500 quarts. Several women had canned over 500 quarts with practically no failures, and this was at a higher altitude where it required a longer period of processing. Food saving was the one thought of the women of those two thrifty though isolated districts, and nothing was allowed to go to waste. At the present time they are canning chicken, wild turkey and beef.

Cold, damp, poorly lighted and ventilated poultry quarters favor the spread of such diseases as roup. Such contagious diseases as these are difficult and sometimes impossible to control unless given attention in the early stages. Wherever preventive measures fail, separate sick birds from the flock as soon as there is evidence of disease, and then consult expert advice to effect a cure.

"When They Go To Market"

"This is the best fruit that you have ever sent us.—It's *prime* and should bring the 'top notch' price. What's happened,—land improved down your way or do you grow 'em by magic?"

"No, not by magic—and the land's the same old stuff.—I've been using my head a little and planting my new orchards in *blasted* holes instead of by the old 'spade dug' method. It's easier, takes less help, and the trees grow better and bear sooner. You can see for yourself that the fruit has improved in quality. Wish someone had told me about dynamite twenty years ago;—I'd be richer than I am now."

HERCULES DYNAMITE

can be used for planting trees, clearing land, digging ditches or cellars, breaking up stubborn subsoils, or cultivating between the rows of bearing orchards,—in fact, it can be used in so many ways and for so many purposes that you would find it the most valuable "hired man" that you have ever employed.

At this time of food and labor shortage it is not only good business but good, patriotic common sense to use every means at your command to produce the largest and best crops at the least possible expenditure in time and cash. And this can only be done by using the best modern methods.

Fill out and mail the coupon printed below and we will gladly send you, free of charge, our 68 page illustrated book, "Progressive Cultivation." This book tells you all about the uses of explosives on the farm and in the orchard.

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Gentlemen:—Please send me a copy of "Progressive Cultivation." I am interested in dynamite for _____

Name _____

Address _____

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.
Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Collecting on Note

I hold an unsecured note executed August 1, 1917, due in one year. When is it outlawed and what can I do to force payment? — Subscriber, Cordelia.

If the note was executed within this state it outlaws four years from the date of maturity, that is to say, on August 1, 1922. In order to collect you may bring suit against the defendant, procure a judgment, and levy execution upon any property he may have.

Note from Husband

If a husband gives his wife a note to evidence the loan of certain money, will it stand at his death in this state?—Subscriber, Rialto.

Either husband or wife may enter into any transaction with the other, or with any other person, respecting property, which either might if unmarried, subject to the obligations for fairness and with respect to undue influence which control all actions of persons occupying confidential relations with each other.

Collecting for Hay Sold

A sold two carloads of hay to B, who paid for one but makes no answer to the second. The hay was in number one condition and shipped over two months ago. Would it be best to attach some of B's property? — Subscriber, Escalon.

A is certainly entitled to bring suit and collect, but the advisability of such action is not within the scope of this department, as matters of business policy should enter any such decision. Possibly a good letter stating your intention to bring action unless payment is received within a certain date would bring results and save you the expense and trouble of litigation.

Use of Private Road

A power company has constructed its lines within its right of way along section lines. Over five years ago, before I came here, they commenced using the private road through my ranch. They cause quite a little trouble and I wish to stop them unless they pay me. Can I stop them from using my road and can I collect for past damage caused during the five years?—Subscriber, Elizabeth Lake.

It would hardly seem that any use which the power company has made of your private road would be such as to ripen into a right of way, and you could therefore easily have the same discontinued either by putting up and locking gates across the private road, or if that is not feasible and they persist in their trespass after notification from you that you wish them to stop, you could doubtless procure an order restraining such trespass. In such action you could collect for whatever damage you could prove had been done during the past three years only, unless their travel on your land was shown to be by your permission express or implied.

Plowing Up Avenue

A verbal agreement was made four and one-half years ago between A and B to give 15 feet of land to make an avenue 30 feet wide across a strip of land; it was graded and palms planted on each side. The avenue has since been continuously used by the public. A sold out; can a new owner plow up and plant his half of the avenue?—Subscriber, El Cajon.

A parol gift or grant of a right of way such as that stated which is followed by possession, use and enjoyment, with the knowledge of the grantor or donor for over five years, invests the grantee or donee with an absolute title to the right of way. The right of way is an interest in lands to be conveyed only by an instrument in writing, or it may be acquired by prescription which necessitates the full period of five years; therefore, the new owner is entitled to discontinue the use of the avenue as far as he is concerned.

Range Law in Riverside

What is the law relative to cattle range in Riverside County? What action may be taken to keep cattle from doing damage to growing crops? How may I collect for damage done? —Subscriber, Edna.

There seem to be no special provisions with respect to Riverside County; there were such for San Bernardino and also San Diego, whether they would carry over into a county formed therefrom it is difficult to state. Under the "Estray Act" wherein the recovery of damages is provided for such damages are recoverable where the "land is planted to growing crops, vines, fruit trees or vegetables and is at the time entirely enclosed by a substantial fence or other enclosure." In such case the actual damages with costs of suit may be recovered and plaintiff is entitled to the issuance of a writ of attachment against the animals upon filing his verified complaint and no animals are exempt from such attachment. Unless the land is enclosed it is very doubtful whether any damages could be collected.

Fencing Railroad Tracks

I own open land in Kern County through which the railroad runs. Is the company required to fence right of way through farm land if requested by the owner of the land? How may I obtain a crossing to pass from the land on one side to the other? How should I go about it to obtain a pipe line across the right of way to convey irrigation water to the land on the opposite side of the track from where the pumping plant is located?—Subscriber, Los Angeles.

Section 485 Civil Code requires railroad corporations to make and maintain a good and sufficient fence upon both sides of their track and in default thereof renders them liable for any animals killed, except in case where the right of way was procured through said land a price including the value of such fence was paid the owner of the land for the right of way, in which case it is the duty of the owner to maintain the fence. Section 485a of the Civil Code provides that the owner of the land through which the road is constructed has the right to farm crossings for ingress or egress, or to connect the lands with other adjacent lands and the railroad must construct and at all times maintain such farm crossing in good safe and passable condition, provided that the railroad commisssion has the authority to determine the necessity for the crossing; place, manner and conditions under which it shall be constructed; and fix and assess the cost. The pipe line matter would probably be within the scope of the last section. It would be best for you to take the matters stated up with the railroad commission and also with the railroad, and everything can doubtless be arranged.

Machine Not as Represented

An agent partially demonstrates a sewing machine and represents that it will meet certain other requirements; shows an illustration of a machine in his catalogue and represents this machine to be the same. He takes old machine with bill of sale as part payment on the new, which he leaves. The machine left is found to be not as represented and cheaper than that illustrated. I did not require him to give a full demonstration but took his word for most of it. What can I do to recover my old machine and void the contract?—Subscriber, San Jose.

Where there is actual fraud and deceit practiced the contract is void. Upon those premises upon the return or tender of the machine left with you, you are entitled to recover the one formerly owned by you. Upon that theory it is simple, but in practice it is not easy. The contracts signed in these cases are usually very stringent and carefully drawn; an investigation was made by you of the new machine and you were apparently satisfied, you certainly had the opportunity to fully investigate it and should have done so; as to the representations it is a matter probably between you and the agent; before an unbiased court his word would probably be as good as yours and he might not remember the matter as you do; the presumption is always against fraud and you have to establish your case. It is very doubtful if you could recover.

FARM LABOR CONFERENCE

The program for the second farm labor conference to be held in the state council of defense quarters, Ferry Building, San Francisco, December 18 and 19, has been arranged to cover:

Report of executive committee—Work done re labor poaching.

Five minute reports from farmers' delegates.

Outlook for immigration to United States, especially to California.

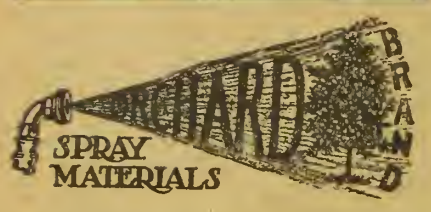
Estimates by federal and state officials re outlook for increased supplies of farm labor.

Proposed new state legislation concerning farm labor, i. e., anti-vagrancy. Accepting advances.

Discussion of delegates' resolutions, i. e., standardization of wages, closing of saloons, importation of labor.

Appointment of a new executive committee to carry out wishes of the convention.

Delegates will be present from about 60 organizations representing farmers, labor and the government. The meeting is open to the public. Details are in the hands of Frank T. Swett, president of the California Pear Growers' Association and president of the California Grape Growers' Association; J. P. Dargitz, former field commissioner for the farmer committee of the state council of defense, and R. L. Adams, federal farm labor agent for the state council of defense.



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Lime Sulphur Solution

and

Prepared Bordeaux Mixture Paste

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These prepared tree sprays are ready for use. They are scientifically blended. Just the right proportions to accomplish your purpose, as proved by years of experience.

ORCHARD BRAND tree sprays are the materials we sell and the measure by which the price is gauged. But the service that goes with them is next in value. Beneath it all is the solid foundation based on General Chemical success with tree sprays all over America, wherever fruit is grown.

When you get it fixed firmly in your mind that ORCHARD BRAND is the dependable tree spray, shipped in carloads and trainloads to the big fruit growing sections all over the land, you will want to make inquiry as to what it will do for your orchard.

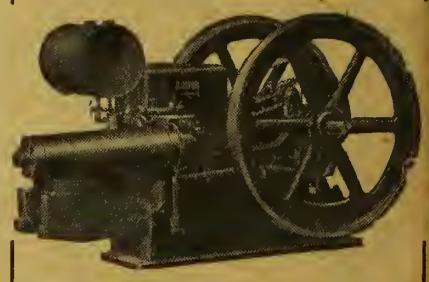
You will want to make inquiry, to learn how to counteract free diseases, and how to control the harmful elements which destroy development of the trees.

You will want authoritive information on such matters. Hence, we invite you to write to us, giving the condition of your trees as you understand it. Our Entomological Department will then send you bulletins and authoritative data that will aid you in solving your problems.

Many years of scientific research, and practical experience on the Pacific Coast; besides the nation-wide experience, and the proper laboratory equipment, are at your service. Write to us now about your tree troubles.

General Chemical Company
Department C
Royal Insurance Bldg.
San Francisco

Witte Irrigating Engines



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Household Department

PLEDGE OF THE LOYAL AMERICAN CHILD

In line with the movement of the food conservation campaign, the following pledge was given wide circulation in the homes of the children of the public schools in Denver, who took great pride in committing the same to memory:

I will avoid all waste, to this I truly swear.
I will be careful of my clothes and everything I wear.
No foolish pennies will I spend but save, that I may give
To those less fortunate than I, who find it hard to live.
And what I take upon my plate I'll eat up every bit
Nor make complaint because I am not very fond of it.
And dishes new I'll learn to eat as far as I am able;
But one thing I will never do, that's finick at the table.
This pledge I take because I am
A soldier true of my Uncle Sam.

GREEN PAINT

MOTHER BIRD, having finished her semi-weekly baking, was mopping the kitchen floor. Her twin sons, Turpin and Thomas bore her company, for far-reaching is the fragrance of molasses cookies. Anyway the boys had desired to ask their mother a question.

They had asked it and had been answered and now Thomas gave a petulant kick at the rounds of his three-legged stool.

"Well, Ma-a—I don't see why-y!" was his nasal complaint. "It's awful cheap! We have to earn the suits ourselves."

"Don't whine, son," Mother Bird admonished. "And that's enough cookies! Tommy, you'll have to sit some place else now, I want to get in here. You know you boys might just as well stop teasing. No use getting after me to join the Boy Scouts. If your father says you can't, why you can't and that's all there is to it. Besides, if your father refuses, it's probably because he's got some good reason for refusing."

"Good reason!" Turpin sniffed. He had been carving surreptitious decorations on the back of his chair but now he desisted gloomily, closed his knife and slid it into his pocket. "Good reason nothing!"

"No reason 'tall!" was Thomas' dark addendum. "Has he, Turp?"

"Naw!" Turp rested a pessimistic chin on his chair. "Just refusing 'cause he knows he can refuse. What's he know 'bout the Scouts—what they do or what it's for an' all?"

"Son, you're disrespectful!" Turp lifted himself, chair and all, out of the mop's path. "Well, what do they do?"

"Do lots of stunts!" Turp muttered. "Go on hikes—an' campin' trips—an' —an'—

Thomas took a hand.

"An' learn how to swim—"

"An' carry the wounded—"

"An' make bandages—"

"An'—an' you hafto do one kind deed every day!" Thomas said it with an air of virtuous finality.

Mother Bird was careful not to let them see her smile.

"Don't need to be a Scout to do kind deeds!" she commented.

To this the boys found no answer. Tom's masterly argument had gone wrong. It were best not to press the point.

"Plenty of kind deeds lying round!" said Mother Bird. It seemed to the twins that she said it with most unnecessary emphasis. She went over to the sink and began to rinse out her pail. "Lots of things you boys might do right round the house here for Cousin Emma and me and to help your father. Sometimes I think you forget your father isn't as young as he used to be. He's been trying to get at that front fence for a month but his lumbago's too bad. There's your job right there—if you're looking for kind deeds." She dried her hands on the roller towel and went into the pantry.

The boys remained silent. There was nothing to say. Thomas sent Turpin an uneasy glance or two; Turpin watched his mother.

There was ostentatious disregard of Boy Scout matters during luncheon. However the seed was rooted in the boys' minds, the same idea occurring to both Turpin and Thomas; if they painted the front fence, might not their father be sufficiently softened, sufficiently impressed with their deservingness, as to relent in regard to the Scout memberships?

Turpin approached his mother.

"Where is the paint?" he inquired.

Mother Bird kept her face beautifully impassive.

"Down in the basement, Turp. You know—back there with those old carpets and things."

But Thomas had found it.

"The green or the white?" he yelled up the stairs.

"The green, Tommy." Mother Bird took her hands out of her dishwater and went to the head of the stairs. "And Tommy—listen! Look in that long drawer of the carpenter table and get out a couple of pairs of overalls of your father's. I don't want you boys to be getting paint all over you."

Thomas ascended the stairs thumpingly, carrying one full bucket, one empty one, two paint brushes and the overalls.

"Now that's real nice!" Mother Bird approved casually. "If you boys hustle you can get through and surprise your father when he comes home this evening. Bless their hearts!" she smiled as they slammed out of the front door.

On the front porch the boys donned the overalls, resembling, when they had assumed them, loosely wrapped packages about to come open. Carefully they divided the paint, selected each his brush. A bucketful of green paint is full of fascinating possibilities, potent with promise.

"You begin at that end and me at this and work toward the middle," suggested Thomas.

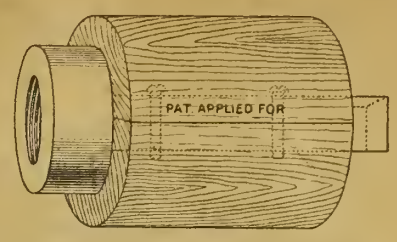
"Nothin' doin'!" Turpin rolled higher his overalls and tied his handkerchief tennis-fashion round his forehead. "Begin together and see who can get out to the end the quickest."

"Oh, now, Tur-rp!" A heated discussion ensued. Clever arguments were advanced by both sides. At last a compromise was effected, the boys agreeing to paint one on the inside, one on the outside of the fence. Straws were prepared. Thomas drew the short one and work began.

For the first few moments there was absorbed silence. Then Thomas straightened up pridefully.

"That's going to be slick! Just as nice and green as anything. Looky, Turp!"

Turpin peered over. On the outside of the picket Thomas had drawn a horizontal and a vertical line, crossing at right angles. Now he was enjoyingly filling in the four spaces.



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BY

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When writing advertisers, mention The Cultivator.

Turpin sniffed. "Look at you! Slopping paint all over the grass!"

"I should worry!" Thomas was drawing a face now. Eyes, nose, whiskers, hair, grew swiftly. "Hi, here comes Hicky Rice! H'lo, Fats!"

"H'lo!" Fats plumped down from his bicycle and stood rolling expressionless eyes from one to the other of the twins. Fat was bound for the drug store on an errand for his mother.

"Awful hot day." Fat tingled his bicycle bell with studied indifference.

There was something about Hicky Rice which always aroused in Turpin an itching antagonism. So now he replied brusquely:

"I don't call this a hot day! 'Swhat I call a fine day. I don't think much of these old cold days—gimme a nice warm day any time! 'Course I ain't fat!" blandly.

"Well, s'long." Hicky rode off at this insult. The painters painted on. Turpin had done five pickets and Thomas six. There was also much green paint on the two suits of overalls and on the faces of the twins strange, smeary woodland scenes were bedaubing themselves. The first enthusiasm of their interest, some of the fun of the thing, had worn off but in their place was a deep sense of self-satisfaction. Unwontedly kind thoughts fatherward filtered into their boyish hearts. They recalled their father's painful progress up the street that morning, his groans when he sat down in or rose from a chair, the difficulty he had picking anything up off the floor. It was good to be doing something for one's father who had the lumbago.

"Must be fierce to be getting old!" ruminated Thomas once.

The sun scorched down upon their cheeks and throats. There was not a breath of breeze, not a leaf of shade where the twins stood at the fence. They worked silently, dipped and painted and smoothed, reached and bent and rose. They had no more callers—all the boys of the neighborhood save themselves and Fats had gone down the river to the Presbyterian Sunday-school picnic. Turpin and Thomas had refused the Sunday-school picnic for these affairs had of late years become sadly anemic. Now they began to wonder whether after all——

(Continued next week.)

THE YELLOW STREAK

Belgium was devastated, her people enslaved, her children dying, her most precious possessions violently taken from her, for four years, and in all that time all her people, from king and queen down, did not complain of their lot as much as the Germans have since the armistice was signed.

France for 51 months was a battlefield, her capital endangered, her sons sore pressed by the invaders, but France never lost courage or whimpered.

Serbia was wiped out, the victim of atrocious crimes, but she kept her courage.

Russia, Austria-Hungary, Bulgaria, Turkey—all have been beaten in the field and forced to surrender, and every one of them has behaved with a certain amount of resignation betokening courage.

But Germany howls like a whipped cur, cringes before its conquerors, weeps crocodile tears, begs, whines; all the yellow, all the aniline dye works in all of Germany ever turned out couldn't make her yellower.—New York Sun.

A man can sell his reputation once; after that he couldn't give it away.

SOME GOOD PUDDINGS

Written for California Cultivator
By Mrs. C. L. Gardner

Tapioca-Corn Pudding

Four tablespoons of tapioca soake three hours in cold water Scald tw cups of milk in double cooker, the stir into it three heaping tablespoon of yellow corn meal with which h been mixed three tablespoons of N. molasses. Let this mixture cook twe ty minutes, stirring frequently to p vent lumping. Take from fire, ad tapioca drained from water, one-thir cup of honey, one-third cup of seede raisins, lump of butter substitute si of walnut and one-half teaspoon salt. Put in buttered baking di Pour over top one-half cup of mil but do not stir it in. Bake two hou in moderate oven. Eat with or wi out cream.

Elizabeth Pudding

One and a half cups of apple sau which has been sweetened with hone and put through colander to mak smooth. Add to it one cup of sta coarse bread crumbs, two well beate eggs, one-third cup of seeded raisin and one-fourth teaspoonful salt. Fl vor with nutmeg or cinnamon. Put buttered baking dish, dotting top wi bits of butter substitute. Bake moderate oven for one-half hou Good eaten either hot or cold, a with or without cream.

Virginia Pudding

Into two cups of boiling water st two tablespoons of corn starch, ad ing while the mixture is hot one-thi cup of honey. Let this cool. Th add to it the grated rind and juice one lemon, two eggs well beaten, o cup of bread crumbs and one-four teaspoon of salt. Put in buttered ba ing dish, dotting top with bits of bu ter substitute. Bake one-half hour moderate oven. Eat hot or cold, wi or without cream.

PICKLES—GREEN TOMATO AN RIPE CUCUMBER

Written for California Cultivator
By Mrs. W. H. Snipes

There are still a great many gre tomatoes in the home gardens a larger tomato patches, so I am sen ing a recipe for green tomato pickl which I consider the best I have ev tasted. Not nearly as much time trouble to make as most of the gre tomato pickles.

I wonder how many housewiv ever use the old yellow cucumber They make one of the best pickl ever placed on the table. I hope so of you still have some cucumbers th have gone to seed and will try t recipe and just see how very go they are.

Green Tomato Pickle

Slice a gallon of unpeeled gre tomatoes and six large onions, a mix them together. Stir into the a quart of vinegar, one cup of brow sugar, a tablespoon each of salt, pe per and mustard seed, a half tab spoon each of ground allspice a cloves. Stew until the tomatoes a very tender and seal in glass ja I sometimes add three or four red a green sweet peppers sliced in rings.

Ripe Cucumber Pickles

Twelve large ripe cucumbers. Pe cut in quarters lengthwise, remo seeds, then cut crosswise in one-in slices. Add vinegar to just about co er, two teaspoons salt, two of cur powder and one cup of sugar. L cook until tender and yellow. Se while hot in glass jars. Sweet pe pers, four red and four green, chopp makes a pleasing addition.

HOW TO PREPARE A HUSBAND

A good many husbands are utterly spoiled in the cooking. Some women set them constantly in hot water; others let them freeze by carelessness and indifference. Some keep them in a pickle all their lives. It is not reasonable to suppose that any husband can be tender and appetizing treated in this way, but they are really delicious when properly prepared. In selecting your husband you should not be guided by the silvery appearance, as in buying mackerel, nor by the golden tint, as in picking salmon. Be sure to select him yourself, as tastes differ. Do not go to market for him. The best are always brought to your door. But it is far better to have none unless you will patiently learn how to cook him.

A preserving kettle of the finest porcelain is best but if you have nothing but an earthen pipkin, it will do, with care. See that the linen in which you wrap him is nicely washed and mended, with the required number of buttons and strings securely sewed on. Tie him in the kettle by a strong comfort cord. The duty cord is breakable and apt to let him fly out of the kettle and become burnt and crusty on the edge. Of course, you know that, like a crab or lobster, you have to cook him alive. Set him near a clear, steady fire of love, neatness and cheerfulness. If he sputters and fizzles, do not be anxious. Some do that until they are quite done. Add a little sugar in the form of what confectioners call kisses, but no vinegar or pepper on any account. A little spice will improve him, but it must be used with judgment. Do not stick any sharp instrument into him to see if he is becoming tender. Stir gently, watching the while lest he lie too flat and too close to the kettle, and so become flabby.

If thus treated you will find him digestible, agreeing nicely with you and the children. He will keep as long as you like, unless you become careless and set him in too cold a place.

MORE THAN LIFE

Here is a part of the speech in which Mr. Lionel Barrymore, as Milt Shanks in "The Copperhead," explains his supposed treachery and proves himself to be a patriot:

"I wuz called to Washington by Lincoln, an' two days later, at night, in his library—White House—he walked over to'erd a winder, and, without turning 'round, he says, 'Milt'—— (Pause.) Funny I remember a clock ticking on the mantelpiece. (Pause.) I sez, 'Mr. President'—— (Pause.) 'Milt, how much do you love your country?' (Pause.) 'I calc'late I'd die for it,' I sez. (Shakes head.) 'Thousands o' boys is a-crying to do that.' Then he turned around. 'Would you give up sumpin' more'n life?' (Pause.) 'Try me,' I sez. The president run his hands through his hair an' went on: 'It means to be odious in the eyes of men and women—ter eat yer hear out—alone—for you can't tell yer wife—ner chile—ner friend.' (Pause.) 'Go on,' I sez. (Pause.) 'The southern sympathizers are organizing in our state—really worse than the soldiers. I want you ter jine them Knights o' the Golden Circle—ter be one of them—their leader—if you kin. I need you, Milt. Yer country needs you.' (Pause.) Hadn't been two minutes since he was laffin', but he lifted his hands, and it seemed we wuz the only folks in the world (pause)—and that clock. (Pause.) Funny I remember that. (Pause.) 'I'll do it,' I sez. (Pause.) He tuk a little flag out o' his pocket—like as not this very one—put it on the table like I'm puttin' it. (Pause.) 'As chief magistrate of the nation I'll muster you inter the nation's service,' he said. He laid my hand where the blue is and all the stars, and put his hand over mine (pause) and said nuthin'—jes' looked in my eyes—an' looked—— (Pause.) (Nods.) Well, I jined 'em."

THE TOUCH SYSTEM

One of two darkies who run a bootblack "parlor" in partnership was bragging of his well-developed sense of touch, particularly in the matter of money. He boasted that he could tell the denomination of any United States coin merely by feeling it. His partner wearied of these boasts and came back with this:

"Your sense o' feelin' ain't nothing to my friend Marcus. Him and me used to work on the Pullman down through Kansas. Marcus had been on this route for about ten years. One night when we was both a-sleepin', 'long around midnight I wakes up and I shakes Marcus and I says: 'Marcus, where are we?' An' Marcus he jest rolls over and sticks his hand out the window and he says: 'We're goin' through Oswego.'"

FEEDING THE BABY

The very prosperous looking gentleman stopped and permitted the very pretty girl to fasten a carnation in his buttonhole. Then he handed her a quarter.

"What is this for?" he asked.

"You have fed a Belgian baby," was the reply.

"Nonsense," said the other, adding a $5 bill to his contribution, "you can't do it. Here, take this, and buy a regular meal for the baby."—Pittsburg Sun.

NO-MAN'S LAND SOON TO GROW CROPS

The French government has already made arrangements for bringing back into cultivation the desolated and war-torn areas from which the enemy has been driven. The dense population of France makes prompt agricultural restoration necessary to relieve the food situation. Preference will be given to farmers who originally lived in the invaded regions.

JUST GROANS AND GRINS

"Here lies the body
Of William Jay,
Who died maintaining
His right of way.
He was right
As he sped along,
But he's just as dead
As if he'd been wrong."

There's not a pair of legs so thin,
there's not a head so thick,
There's not a hand so weak and white,
nor yet a heart so sick,
But it can find some needful job that's
crying to be done,
For the Glory of the Garden glorifieth
every one.
—Rudyard Kipling.

DARK COLORED BULL

Mr. Johnsing: "Say, Mr. Dorman, what am de meaning of dis here line on de ticket whar it says, 'Not transferable'?"

Mr. Dorman: "Dat means, Bre'r Johnsing, dat no gen'leman am admitted unlessen he comes hisself."

THE FALLEN IDOL

A sign in a restaurant has this variation of an old idea:

Pies Like Mother Made, Five Cents.

Pies Like Mother Tried to Make, Ten Cents.

The other day a woman boasted that she had bought six pounds of sugar by going to each of the three stores near her home. "But if I didn't use it, someone else would," she said cheerfully.

That's just the point!

Meet the wheat crisis by recognizing it — join the "Wheatless-till-harvest" clubs.

This is your first chance to defend the flag—go the limit.

Applied Patriotism

Woman has made herself indispensable to the Nation's war activities. This is being demonstrated daily in many splendid ways. The telephone operator takes her place in the front ranks of our "national army" of women.

Back of the scenes, invisible, her war work is to make telephone communication possible. Through her the Chief of Staff in Washington speaks to the Cantonment Commandant in a far-off state. The touch of her fingers forges a chain of conversation from Shipping Board to shipyard, Quartermaster General to supply depot, merchant to manufacturer, city to country, office to home.

Without her this increasing complexity of military, business and civil life could not be kept smoothly working. Hers is patriotism applied. She is performing her part with enthusiasm and fidelity.

The increasing pressure of war work continually calls for more and more telephone operators, and young women in every community are answering the summons—cheerfully and thoughtfully shouldering the responsibilities of the telephone service upon which the Nation depends. Each one who answers the call helps speed up the winning of the war.

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Los Angeles Market

Los Angeles, Dec. 11, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.
Cal. Extra Creamery 61

CHEESE

Brokers' prices:
California fresh, lb. 33

EGGS

Exchange quotations. Price to retailers 2 to 3 cents higher.
Fresh extras 75
Case Count 70
Pullets 71

POULTRY

Hens; heavy, 31; light, 28; colored, 32; broilers, 27-31; friers, 33; roasters, 30; old cocks, 20.

Ducks, 25; ducklings, 28-30; geese, 28; turkeys, 30-34; squabs, 40-43; Belgian hares, 20.

LIVESTOCK

Fed steers have not been plentiful and those few that have been received brought $13.00 and in a few cases $13.50. Right at this time steers grading good or higher will find a ready market with stronger prices.

Good cows are also in demand. In some cases prices are paid in excess of the published quotations.

The supply of canners and cutters has fallen off. The quality of the bulk of supply is showing marked increase. Calves are scarce.

Poorly finished and light hogs continue to arrive. Prices are strong on stuff of desired weights and an advance of fully 50 cents has been registered. As a matter of fact the present level of prices at Los Angeles compares very favorably with Chicago prices. The supply of hogs is running light.

Handy weight lambs are strong and quoted prices are not only maintained but in some cases are sprung. Wethers are scarce but in good demand. Ewes go begging.

Report of live stock conditions on the Los Angeles market as compiled by the United States Department of Agriculture, Bureau of Markets, through the local office:

Good Steers .....12.00@13.00
Medium Steers .....11.00@12.00
Common .....9.00@10.00
Good Cows .....9.00@10.00
Medium Cows .....7.00@8.50
Common and canners .....5.00@6.00

Prices quoted below are for carload shipments. Driven-in, or truck hogs sell for ½ cent less:

Hogs—
No. 1 hogs, 150-200 lbs. .....16.50@17.00
No. 2 hogs, 250-350 lbs. .....16.00@16.25
Sheep—
Lambs, 65-80 lbs. .....15.00@15.25
Wethers .....11.50@12.00
Ewes .....8.00@10.00

POTATOES

Wholesale selling prices:
Burbanks .....2.40@2.50
Sweet, lug .....70@75
Inyo Whites 2.00

ONIONS

Wholesale selling price, cwt.
Australian Brown, lug .....1.60@2.00
White Globe, cwt. .....3.50@4.00

VEGETABLES

Wholesale prices:
Beans—String .....10@11
Limas, lb. .....8@8½
Cabbage, cr. .....1.00@1.25
Carrots, doz. 40
Cauliflower, cabbage cr. .....2.75@3.00
Celery, cr. .....3.00@3.65
Egg Plant, lb. 5½
Lettuce, cabbage cr. .....1.25@1.35
Parsley, doz. 15
Peas .....10@12½
Peppers, Chili, lb., 5@5½; Bell, lug .85@90
Pumpkins, lb. best .....1@1¼
Radishes .....15@20
Rhubarb, bx., Crimson .....65@75
Strawberry 1.00
Spinach, doz. 35
Squash—Hubbard, best, lb. 2
Tomatoes, unwrapped, ripe lug...75@1.00
Turnips, doz. .....20@35

FRUITS

Apples—Bellfleurs, bx. .....1.75@1.85
Yucaipa Delicious .....2.75@3.25
Pearmains .....1.75@3.00
Newtons .....1.75@1.85
King David .....2.25@2.50
Pears—Bartletts, storage lb., 8; D'Anjou lb., 7@8; Kiefer, lb., 5; Winter Nellis, lb., 6@7.
Persimmons, lb. .....5@9

CITRUS

Lemons: Fy. packed 4.00@4.50 bx.; loose, 2.50@3.00.

Oranges—Tulare County Navels large size, 3.00@4.00; medium size, 5.00@6.00; unwrapped 25c less. Southern Navels medium to small size, 5.00@6.00; loose, 3.00@3.25 bx.

Grapefruit: Tulare County Seedless fy., 3.00@3.50 bx.; Arizona Seedlings, loose, 5½@6 lb., 3.50@4.00 packed bx.

HONEY

Cash to producer on farm:

Supplies very light, very few sales. Extracted, lb.: White, supplies practically exhausted, too few sales to establish a market; Light Amber, Sage and Alfalfa 21½@22 lb.; Beeswax, 36@37 lb.

BEANS

Price to retailer, cwt.:
Pinks .....7.50@8.00
Tepary 5.00
Lima 11.50
Large White 10.00
Small White .....10.25@11.00
Blackeyes 6.25
Garbanzos 11.00
Lentils 25.00
Kidney 12.00
Cranberries 11.25
Pintos 7.25

HAY

Quotations by Nichols - Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

No. 1 Tame Oat .....26.00@28.00
No. 2 Tame Oat .....23.00@25.00
No. 1 Barley 22.00
No. 2 Barley .....19.00@21.00
No. 1 Alfalfa 20.00
No. 2 Alfalfa .....17.00@19.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEEDSTUFFS

Prices offered on exchange. For federal price see San Francisco market:
No. 1 Bright Feed Barley 2.30
No. 3 Yellow Corn, bulk 3.20
No. 3 White Corn, bulk 3.20
No. 3 Mixed Corn, bulk 3.20
Milo Maize, local .....2.51¼@2.52½

San Francisco Markets

San Francisco, Dec. 10, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapped, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:
Extras 63

Dec.	3	4	5	6	7	9
'18 ...	63	63	63	63	63	63
'17 ...	41	42	42	43	44½	..

CHEESE

Dairy Exchange quotations:
Cal. Flats 34½
Ore. Triplets 37½
Jack, full cream 30

EGGS

Dairy Exchange quotations:
Extras 82
Selected Pullets 81
Extra Pullets 77

Dec.	3	4	5	6	7	9
'18 ...	82½	82	82½	82¼	81	82
'17 ...	53½	52½	53½	52	49	..

POULTRY

We quote to producers, lb.:
Hens, 33@35; broilers, 42@48; fryers, 36, old roosters, 20@22; young roosters, 33@34.
Ducks, 28@30; geese, 28@30.
Belgian hares, live, 20@22.
Jack Rabbits, doz. 3.25@3.75.
Squabs .....3.50@4.00
Turkeys, dr., 38@43; live, 35@37.

LIVESTOCK

Prices gross weight:

Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.

Steers, lb., 11@13; thin, 9½@10; cows and heifers, 8@9½; thin, 6@6½; calves, 10½@11½.

Sheep — Lb. gross weight: Wethers, 11½@12; ewes, 9@9¼; lambs, yearlings, 12@12½; milk, 14@14½.

Hogs—Hard grain fed, weighing 100 to 150 lbs., 16; 150 to 300 lbs., 16½; 300 to 400 lbs., 15¾.

POTATOES

Wholesale selling prices at wharf, cwt.:
Choice deltas, 1.50@1.75; fy., 1.75@2.00; Red Shima, 2.25; Oregon Burbanks, 1.85 @2.25; Gems, 1.85@2.25; British Queens, 1.75@1.90; sweet, lb., 2½@3.

ONIONS

Wholesale selling price on wharf, cwt.:
Australian, Brown and Yellow .1.25@1.50

VEGETABLES

Wholesale selling price:
Artichokes, doz. .....35@1.25
Beans, String, lb., 6@15; Limas.....6@9
Beets .....1.00@1.50
Brussels Sprouts, lb. .....5@6
Cabbage, lb .....¾
Carrots, sk. .....1.00@1.25
Cauliflower, doz. .....75@1.00
Celery, doz. .....30@50
Cucumbers, hothouse, bx. of 30 .2.50@2.75
L. A., lug .....2.50@3.00
Egg Plant, lb. .....5@7
Lettuce, doz. .....20@40
Southern Iced, cr. .....1.75@2.00
Peppers, Bell, lb., 6@9; Chili .....4@5
Mushrooms, pkg. .....20@1.00
Peas .....10@15
Pumpkins, sk. .....1.00@1.25
Spinach, lb. .....3@3½
Rhubarb, bx. .....1.25@1.75
Squash—Cream .....85@1.15
Hubbard, sk. .....1.25@1.75
Marrowfat .....1.25@1.50
Winter, sk. 1.00
Tomatoes, lug .....50@1.00
Turnips, sk. .....75@1.25

FRESH FRUITS

Apples—Newton Pippins .....1.35@1.75
Pearmain .....1.25@1.65
Lady Apples, bx. .....2.50@2.75
Spitzenburg .....2.00@3.00
Avocados, doz. .....6.00@7.00
Bananas, lb. .....8@8½
Grapes, cr. .....1.35@2.25
Olives, lb. .....10@12½
Pears—Beurre Hardy 1.50
Kieffer, ½ bx. .....1.50@1.75
Winter Nellis .....2.25@3.00
Persimmons, bx. .....1.00@1.50
Strawberries, chest .....14.00@1500

CITRUS

Box: Lemons, 3.50@5.50; lemonettes, 2.50@3.50; grapefruit, 2.30@3.00; limes, 1.50; Mandarins, 1.50@1.75; per cr., 1.75@ 2.00; tangerines, bx., 1.25@1.50; half orange bx., 2.50@3.00; new navel oranges, 3.00@6.00.

RICE

Prices which rice millers of this state have voluntarily agreed with the food administration for California to pay to growers for paddy rice are as follows:

No. 1 and No. 2 Japan, in sacks, $4.32 per 100 pounds.

No. 3 and No. 4 Japan, in sacks, $4.16 per 100 pounds.

Prices for other grades will be paid for on a basic value proportionate, and no higher prices than those quoted above for any grades whatever will be paid.

The millers agree further to sell cleaned rice and by-products for prices not to exceed the following:

Fancy Japan, 1½c per pound.
Choice Japan, 7⅜c per pound.
Fancy second heads, 6⅞c per pound.
Screenings, 5⅝c per pound.
Brewers', 5¼c per pound.
Rice polish, $50 per ton, carlots.
Rice bran, $36 per ton, carlots.

NUTS

The Almond Growers' Association has established opening prices as follows per pound:
Nonp. 27½
I.X.L. 25½
Ne Plus 24½
Drake 20

Outside dealers have named prices above these quotations and it is understood association stock is practically closed out and prices withdrawn.

Walnuts: Net prices have been named by the California Walnut Growers Association:
No. 1 Softshell 28
No. 2 Softshell 25
Jumbo 30
Fancy Budded 31½
Golden Gate Budded 29

Franquettes, Eurekas and other fancy varieties sold on sample. No. 1 Softshell guaranteed 88 per cent good; Fancy Budded, 90 per cent. In case of worms or damage by ants not more than five per cent.

BEANS

Jobbers' prices, cwt., recleaned:
Limas 11.00
Small Whites .....9.40@9.50
Large Whites .....8.00@8.25
Blackeyes .....5.40@5.60
Pinks .....6.75@6.90
Bayous .....7.25@7.40
Mex. Reds .....7.00@7.25
Cranberries .....8.25@8.50

HONEY

Cash to producers, country loading points:

Extracted, Water White, supplies very light, 22@23½; White Sage, supplies very light, 20@23; Light Amber, supplies very light, 18@20½; Dark Amber, 18@19 lb.; Beeswax, supplies moderate, 35@40 lb.

GRAIN

Wheat—Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per Bushel	Per Cental
No. 1	$2.20	$3.62 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	$2.18	$3.63 1-3
No. 2	2.15	3.58 1-3
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	$2.16	$3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 ½

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.

Barley—Feed, 2.10@2.17½ per cental for choice spot; shipping, 2.25-2.27½; milling, 2.30.

Oats—Red feed, 2.40@2.60 per cental; seed, do, 2.85@3.00, white recleaned at 3.15@3.20.

Corn — Egyptian, 2.75@3.00 per cental for choice white; Milo, 2.65@2.70. Rye nominal.

HAY

Under date of December 7, Scott, Magner @ Miller says:

Receipts past week 561 tons, last week 844.

No doubt this decrease has been caused to a great extent by the shortage of cars. Stock cars at times have been offered for the shipment of hay but have had to be refused as weather conditions have been such that hay would be more of less damaged. There is enough hay arriving that was damaged by the recent rains without getting any sound hay in that condition.

Most of the arrivals were of damaged alfalfa hay, some very bad, most of which has had to be placed at the stockyards. The rains of the latter part of the week, should they extend into the interior, will no doubt wet these late cuttings of alfalfa again. At the same time they will be most favorable to growing crops and without doubt will place the country in a most favorable condition. The greater portion of the country at this time resembles spring, everything being well advanced. A sample of wild oats recently sent us from San Benito County district shows wild oats ready to cut, but, of course, at this time of year cannot be made into hay and is therefore being plowed under. It is, however, the most abnormal growth we have ever witnessed at this season. Practically no fancy wheat or red oat hay has arrived during the week and we believe some could be sold to advantage. Trade in general is extremely dull and we do not look for much improvement until after the holidays. Owing to weather conditions practically no rice straw has arrived during the week, most of it being more or less wet and not in shape to bale. Very little hay has moved for export and county demand is light.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.

Fancy Wheat Hay
(light 5 wire bales) .....27.00@29.00
No. 1 Wheat or Wheat and
Oat Hay .....25.00@27.00
No. 2 Wheat or Wheat and
Oat Hay .....19.00@23.00
Choice Tame Oat Hay .....24.00@26.50
Other Tame Oat Hay .....19.00@22.00
Wild Oat Hay .....19.00@21.00
Barley Hay .....19.00@21.00
Alfalfa .....17.00@21.00
Stock Hay (in order) .....17.00@20.00
No. 1 Barley Straw, bale .....50@80

Damaged hay (all kinds), according to condition.

SEEDS

Flax .....8@8½
Millet .....5@5½
Rape .....2½@3

Citrus Fruit Market

Los Angeles, Cal., Dec. 11, 1918.

There is the usual complaint by Eastern buyers of the tastelessness of the first oranges. While the fruit complies with the 8 to 1 test, they say, it lacks flavor and its poor color renders it still less attractive. Prices are down decidedly from the record prices received some weeks ago. The heavy run of large sizes also hinders ready sale and prices have to be shaded. Some Japanese oranges have been received in Vancouver, mostly Satsumas packed in 10 pound boxes.

The demand for lemons continues steady at practically the same prices held for the last two weeks.

Shipments

Shipments of citrus fruits from Southern California to date since November 1, 1918: Oranges, 478 cars, lemons 710, total 1188. To same date last season; oranges 1938, lemons 359, total 2297. From Central California to date; oranges 1820, lemons 151, total 1971. To same date last season; oranges 1132, lemons 39, total 1171. From Northern California to date; oranges 127, to same date last season 112.

AT THE AUCTIONS

December 6

New York: 4 cars Navels, 4.00-6.95, 5 lem. 2.75-4.15.

Philadelphia: 1 lem. 2.50-3.15.
Boston: 1 Nav. 5.25, 1 lem. 3.60-4.05.
Cleveland: 1 Nav. 3.45-4.05, 1 lem, 3.85.
Pittsburg: 1 Nav. 4.6015.35, 1 lem. 1.75-3.65.

December 9

New York: 5 cars Nav. 4.40-7.30, 7 lem. 2.90-4.30.

Pittsburg: 2 Nav. 4.55-5.55, 2 lem. 1.90-4.55.

St. Louis: 4 Nav. 3.60-5.55, 1 lem. 3.50-4.55.

Cleveland: 4 cars. Nav. 4.15-4.65, lem. 3.65-4.05.

Boston: 3 Nav. 4.75-6.00, 2 lem. 3.00-4.10.

December 10

New York: 7 Nav. 3.80-6.75, 1 Val. 4.75-7.65, 5 lem. 2.60-4.00, Arizona Nav. 5.00-5.80.

St. Louis: 1 Nav. 4.50-5.45, 1 lem. 4.35-4.80, Val. 4.10.

MARKET NOTES

High prices prevailing in Eastern markets for California Iceberg lettuce past ten days has resulted in rather heavy shipments from Southern California. Practically everything that was fit to ship was cut so that supplies this week are hard to find. The stock going out last week and this is of fair quality and in good crisp condition but solid heads are very few.

Recent bean purchases by the United States grain corporation, 42 Broadway, New York City amounting to about 60,000,000 pounds, included 25,000,000 pounds Colorado and New Mexico Pintos at seven cents f. o. b., 15,000,000 pounds Michigan White beans at 9@9¼ cents, 5,000,000 pounds California Pink beans at seven cents, 10,000,000 pounds California Small White beans at 8¾@9 cents. These purchases and some earlier in the season are expected to cover the army and export requirements for the next 90 days.

Onion prices have worked upward at Stockton about enough to pay for the resorting so Australian Browns there are moving slowly at 1.25@1.35 per cwt. Prices are practically stable in all other parts of the country, about 1.60@1.75 in the Eastern markets and $2.00 top in the Northwest.

The estimated acreage of Brussels sprouts in the Half Moon Bay district is 500 acres this year, as compared with 350 last. Canneries are starting up and shipping stock will be much reduced. The quality of the product and the yield per acre are much better than last year.

Shipments of celery from the El Monte district are going out in mixed cars. Movement will be light until January.

Butter is still going East from San Francisco.

The shipping season for California cauliflower and broccoli is now under way. While early November shipments were light, owing to the lateness of general fall rains, indications are that winter shipments will be heavy in spite of decreased acreage. The prospects for yields are much better than last year as growing conditions have been better. Fields which produced 250 pony crates per acre last year should produce nearly 400 crates this year if favorable conditions continue. It is true that much of the fall weather was bright and hot, but moisture conditions have been much ahead of the previous season.

The old time treatment known as the formaldehyde solution is the most satisfactory treatment of seed potatoes to prevent scab. It is as follows: Mix one pint of 40 per cent formaldehyde solution (commonly called formalin) with 40 gallons of water. Soak the uncut tubers in this solution for two hours. The same solution may be used repeatedly. Treated tubers not required for planting may be used for food or fed to animals with perfect safety.

GROUND SQUIRRELS MUST GO

There is to be no let up in the war on ground squirrels, says the state horticultural commission. A plan of action has been mapped out by the rodent control division which calls for a series of meetings and field demonstrations to promote interest in rodent eradication in cooperation with every county horticultural commissioner in the state beginning December 1, 1918. Superintendent W. C. Jacobsen will personally conduct this campaign.

The plan is to spend one week in each county holding meetings as well as practical field demonstrations in squirrel and gopher control; this to be followed by the field assistant independently, spending from one to four weeks in each county.

The ground squirrel must go! Every effort will be put forth to declare several counties entirely free from ground squirrels during the coming year. Three counties, through their county horticultural commissioners, already have expressed their desire to have the ground squirrels eradicated from the county's entire area or from certain districts therein. It is desirable that each county be able shortly to declare a certain area free and with this section as a focus, as soon as possible to eradicate the ground squirrels from the county's entire area. In order that any county, or part thereof, may be declared free of ground squirrels by the rodent control division of the state commission of horticulture, a thorough inspection of the area involved by a representative of the division must be made and this inspection be substantiated by ten prominent and representative land owners in the district.

CROP PROBLEM MET BY TRACTOR

The farmer of today faces the problem of raising more crops than he has ever produced before, according to W. H. Sanders, instructor in farm motors, Kansas agricultural college.

"To meet this problem of increased production the farmer must have more power for the cultivation of crops. Six horses is the maximum number that can be handled by one man and this number cannot give sufficient power. The gas tractor is rapidly coming to fill this lack of power because of its great amount of pulling strength and because it can be easily operated by one man.

"The gas tractor is being used more extensively in the wheat belt because it makes possible the cultivation of more than could be cultivated by horses. The gas tractor is rapidly replacing the steam engine in threshing because there is less danger from fire from a gas engine.

"The extensive use of the tractor is shown by the large number of tractor factories in the United States. At present there are perhaps more than

BIG MOVEMENT IN BEANS STARTS

Manager Turner of the California Bean Growers' Association at Stockton, reports 1918 beans of all varieties purchased by the United States Food Administration Grain Corporation. These beans are being assembled at Port Costa and will be loaded direct to vessels there. These purchases were quite extensive and practically cleaned up the low priced offerings from the market. The Bean Growers' Association furnished the largest block to make up this order. All varieties were furnished at the market prices and this will be the practice of the food administration in all future purchases. No prices will be fixed by the government this year. This first order for California beans is not for army and navy requirements. These orders will come later. These beans are for our Allies and friendly neutrals. The government purchases have not been confined to California, large purchases having been made in Michigan, and late reports indicate that 75 per cent of the Michigan crop has been sold.

The government has also purchased 10,000,000 pounds of Pinto beans. Release of tin to the canners permits them to resume the normal canning of beans and large quantities have been purchased for these interests.

Action of the United States shipping board in providing additional ships to handle California products will be of great assistance and in this way overcome the difficulties occasioned by car shortage, all of which add to the promise of better days for the bean growers.

RIGHT SEED INCREASES WHEAT YIELDS

Many bushels can be added to the 1919 Liberty wheat harvest, and farmers can reap added profits from increased yields with no more than the usual labor or expense if the variety of seed sown this fall is pure and is well adapted to the locality. The seed should be free from noxious weed seeds and not infested by destructive plant diseases. It should be clean, plump and heavy.

Increase next year's yield by adding bushels to every acre through preparations made now. Big wheat yields are produced on soil which furnished a firm yet friable seed bed over a compact subsoil. The ground should have sufficient natural slope to allow good surface drainage and should be provided with subsoil drainage. The soil should have plenty of vegetable matter and plant food, and should not be acid. Loams, silt loams, clay loams, and some of the clay soils are best types for wheat. Sandy soils and many heavy clay soils are not so suitable for wheat growing, the former being too loose in texture to retain moisture and the latter too compact to allow aeration and proper drainage. A silt loam overlying clay is a good combination.

COLORADO POTATO BEETLES

Deputy Quarantine Officer C. H. Vary reports destroying Colorado potato beetles found for the first time at Los Angeles on October 12, when a car of imported potatoes from Idaho Falls, destined Los Angeles and quarantined at the Salt Lake freight yards, was discovered to be badly infested with this pest by the quarantine inspector.

The beetles were located not only in the sacks of potatoes but also were crawling over the floor and sides of the car. The car was fumigated immediately and precautions were observed that none of the insects escaped.

Under usual conditions these beetles do not succumb readily to fumigation and great care must be exercised that all are destroyed.

While the shipment in question ultimately was diverted to Yuma, Arizona, the foresight and promptness of the state quarantine inspection service may have prevented a gross infestation by this destructive pest.

Under like conditions the Colorado potato beetle would be difficult to handle at destination points and this would justify drastic measures to prevent its becoming established.

THRESHERS SAVE 16,000,000 BUSHELS

Cleaner harvesting and threshing in the United States have come to stay. The so called "blanket test" has shown thousands of grain producers how to determine when a threshing machine is operating properly, and has been especially impressive. Other methods of farm conservation have resulted in further large savings of marketable grain.

Of 33 grain states where efforts toward cleaner threshing were centered, two-thirds have already reported an aggregate saving of 16,000,000 bushels of wheat.

SUBSTITUTE CEREALS FOR FEED

By announcement of the United States food administration, November 14, all regulations requiring the use of wheat substitutes in baking were suspended. Relaxation of the wheat regulation is a direct result of the military armistice which releases cargo ships from military service and enables them to tap the accumulated supplies in India, Australia and the Argentine.

The coarse grains formerly used as substitutes, will be abailable for animal feeds under plans now being worked out.

POLLINATION OF BLOSSOMS

There can be no doubt that insects play a most important part in the life of plants and flowers. Moths and wasps, bees, and many other insects, all assist in carrying the pollen from flower to flower; but of all insects for this purpose the bee is assuredly the most useful. The first object the bee has in visiting a blossom is to collect either nectar or pollen. The nectar is always lower in the flower than the pistil or stamens. In passing through the flower the pollen grains attach themselves to the numerous hairs on the body of the bee, and as the insect flies from flower to flower some of the pollen grains are transferred as the bee brushes against the stigma. The same result occurs when the bee is gathering pollen, a substance which is absolutely necessary to the existence of bee life, as not a single young bee can be reared without pollen.

The federal government, through the biological survey, requests definite information as to amount of grain used in different counties of the state.

MR. PLANTER:

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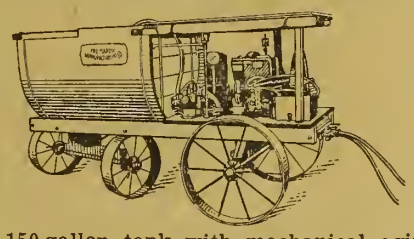

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ALL FOR $300. DELIVERED ANYWHERE IN THIS STATE.

If truck is not needed, deduct $55.00.

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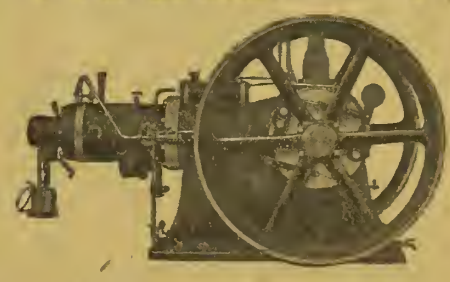

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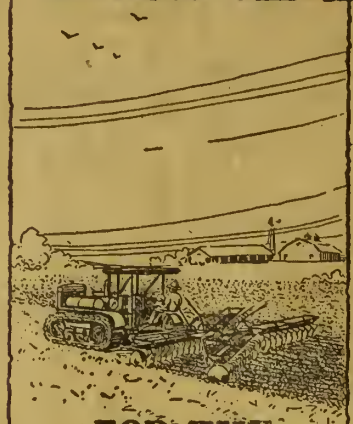

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It is not an overgrown horse disc harrow, but was designed especially for heavy tractor use. This means that it is very heavy and powerful so that it can withstand the severest work to which it will necessarily be subjected.

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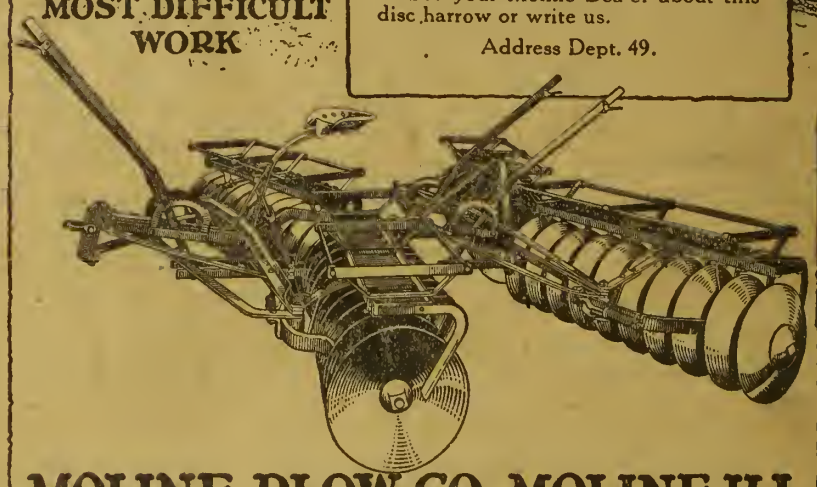

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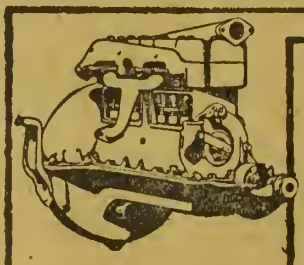

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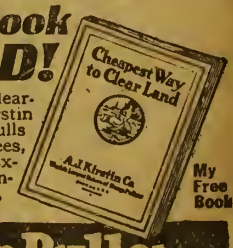

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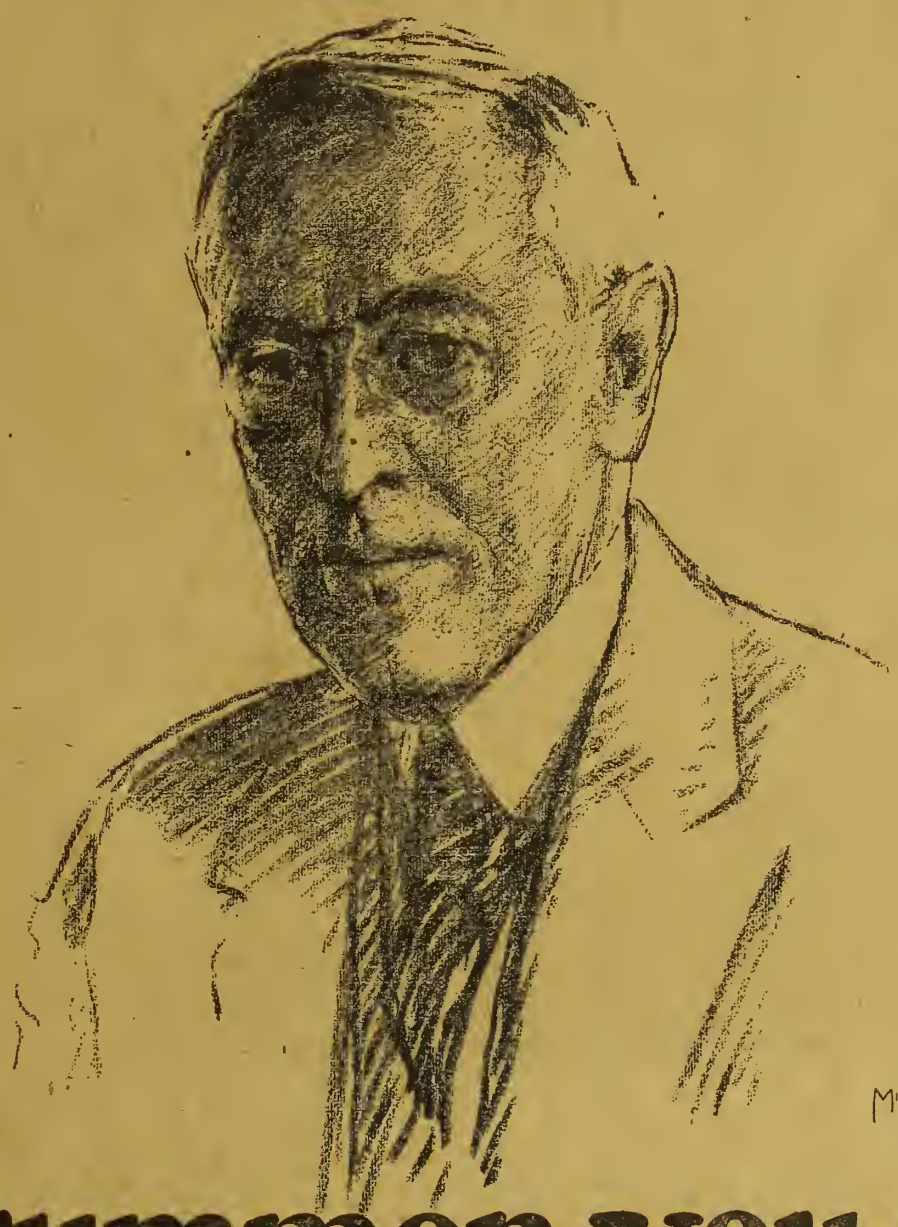
CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — December 21, 1918 — No. 25

DEC 1918



I summon you to the comradeship

Woodrow Wilson

Answer the Red Cross Christmas Roll Call for Universal Membership

Established 1877 Forty-first Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Live Stock

Rural Californian, Established 1877 Combined with California Cultivator 1914. Livestock and Dairy Journal, Established 1901, Combined with California Cultivator 1916.

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Saturday, Dec. 21, 1918

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

The president of the Red Cross summons us to the comradeship on the preceding page. The summons in this case is equivalent to a command to every American. The Hun is whipped but the war and some of its awful results create a condition which must still be met, and the one organization fitted to meet that condition is the Red Cross. It is making a great Christmas roll call drive for universal membership. American-like, we formerly gave little attention to the Red Cross, and countries like Japan far exceeded us in membership. Also, in true American way, when occasion came for universal membership, the problem was met and the organization was supplied with $100,000,000 per year and, still more, with the good-will of thousands of volunteer workers. It is a wonderful organization; let us all be comrades in it.

SUGAR

We may now eat all the sugar we wish. Or rather, we can eat all we wish and we should continue to economize. There is still need of conservation, and the power of conserving is shown by the fact that during the months of July-November the American people saved over and above normal consumption the enormous total of 775,000 tons. The holding out of a lump of sugar from a cup of coffee did not win the war, but the spirit which prompted it won the greatest war in history.

W. S. S.

The war savings campaign conducted some weeks ago was supposed to have secured sufficient pledges to cover the required $2,000,000,000 but since that time the "flu" has come, the war has ended, and the war savings campaign seems to have taken a complete reversal. Today many who bought stamps earlier are serving notice at the portoffice department and cashing in. Hence more millions must be raised. The government is still building ships and is still spending millions. Another Liberty Loan drive will come in the spring. Meantime clean up the old war savings stamp pledges, or, better, double them.

WANTED—A CHANCE

We believe the more important problems for the farmer during the next few years of reconstruction, or, rather, restoration of normal conditions, have to do with marketing. Presumably our labor question will be solved, or at least greatly simplified by the return to their normal occupations of war workers and of soldiers. Today the farmer stands ready to answer with production of any needed food if he can only be assured of a fair market. Under present conditions in California this assurance seems hard to give. Whether the bureau of markets connected with the department of agriculture or the state market commission will be able to solve these problems remains to be seen; at present the farmer stands helpless.

MORE CLUBS NEEDED

A source of great satisfaction to live stock observers is found in the growth of boys and girls' clubs. The number of pig, calf and lamb clubs has increased remarkably during the past year, and although they are unquestionably making future stockmen — and stockmen's wives—they are exerting a fine influence on the community. Any number of cases might be cited where whole communities have received the inspiration of better live stock and better methods of handling as a result of what the boys and girls have demonstrated.

So far nearly all the clubs formed in this state have been pig clubs, but we would like to suggest that the organizers extend their plan to cattle, both dairy and beef, and to sheep.

California is in real need of better cattle and these clubs can be made the means for developing and distributing better stock.

BREEDERS AND THE FUTURE

No better illustration need be furnished as to the general feeling in live stock circles regarding the future, than is disclosed in the pure bred cattle sales held at Chicago during the week of the International.

Forty-three head of Shorthorns sold for an average of $2307. This is the highest average recorded by that breed since the historic New York Mills sale in 1873. But this difference was noted. At the New York classic the wildest enthusiasm prevailed. It was spectacularly staged by speculators and had no more solid basis than a craze for pedigree. The recent Chicago sale was notable for the absence of excitement. Careful breeders calmly and in a business like manner appraised a very select offering for what they felt the future justified them paying.

During the same week Herefords made an average of $1566 and Angus brought near the $1000 mark.

TWO SHOWS—TWO CITIES

The champion steer at the Chicago International sold, on foot, for $2.50 per pound; the champion steer at the Liberty Fair brought 22½ cents per pound.

The question naturally arises as to whether the difference between the Chicago price and the Los Angeles price indicates the real difference between the two steers. Of course it does not. But the difference illustrates the attitude between the two cities. Chicago realizes the value of better live stock and appreciates the value of a great live stock show. Los Angeles does not.

It seems to us that no more graceful appreciation of the Liberty Fair, and particularly of the patience manifested by the exhibitors over the many postponements, could have been shown than for the meat interests of Los Angeles to have followed the Chicago example.

By doing so a great deal of enthusiasm would have been developed—and enthusiasm makes for a successful show.

LIBERTY FAIR

Of all the fairs pulled off under difficulties, the Liberty Fair, just closed at Los Angeles, holds the record. The flu quarantine, laid almost on the original opening date, was continued from week to week and even month to month, and this with some live stock in the pens waiting for the opening. Finally a short respite in the flu situation permitted opening. Then the storms began, and the flu it came back. Still the fair went on.

It was a wonderful fair in that it was the first in many years in Los Angeles. The number of exhibits was great, and the setting the most picturesque of any fair yet held in the state. All honor to those who persisted in the making of this great fair.

JOIN

The spirit of organization seems to be in the air. All the branches of live stock have existing organizations and a systematic campaign for more members is being waged by all. The officers are far seeing men who know the problems that confront their own business and the business at large. Each organization has its special problems, but all are interested in the larger questions that must be solved, and can only be solved through concerted effort.

If you are interested in any branch of animal husbandry it is your duty to put your shoulder to the wheel and help. The next few years will be years of reconstruction. Much is to be accomplished and much will be accomplished, but the extent of accomplishment will be measured not by what the other fellow does, but by what you do.

Imagine all the dairymen organized; all the beef interests organized; all the pork producers organized and all the sheep men organized—and all working together. What a power they would represent! Get in touch with the organization that represents your interests and join.

LONG QUESTIONS

There are some long questions connected with this farming business, and sometimes it seems that when a question is answered, even in part, by some hocus pocus there remains a still longer question yet to answer. We recently stood by an exhibitor of a beef steer in the judging ring at the International in Chicago. The breeder was of course pleased when he saw the red ribbon pinned on the youngster. Of course he thought the steer was entitled to the blue, but "Let that pass," he got second. For generations his forbears had been bred to produce the perfect flesh maker, and in feeding the best plan the human could devise had been worked out.

The next day, however, the carcass judging of the same class of steers gave still other results. The youngster which had proved red ribbon winner was found to be not in the money at all. The fat was laid on too thick. More, it carried a shade of deep yellow.

Now, we may admit that this was largely a freak or a "special" case of degeneration, for ordinarily the judging on foot follows, so far as the judge can "see through the hide," identically the same lines as the carcass judging. But this particular case was just one more proof of the ever-lengthening questions which confront the producer. How may this abnormal shade of yellow color be eliminated in the next generation? What caused it?

CAR WINDOW NOTES

Coming West has less of interest in the car window. Or, perhaps better, the interest centers on getting home and getting out of the country of storm doors, drifting snow and mud roads.

Speaking of roads I recall the California highways paralleling almost every railway. But in a ride from Los Angeles to Washington and return one scarcely sees a concrete base surfaced road until in the neighborhood of Denver. There are however, great mileages in some of these states. Brick is the favorite road builder in many sections though in coming through Southern Iowa rich black dirt—mud rather—is the principal surfacing seen from the car window.

After leaving Washington, when outdoor pansies were still in bloom, the first snow was falling in southwestern Pennsylvania and eastern Ohio and continued much of the way across, being exceptionally heavy in Utah.

Small boy, sled, big dog, hillside. The boy and sled arrive at bottom first but the dog soon lands on top of all.

Fourth Liberty Loan honor cards are in almost every window. Along tracks entering larger towns old freight cars which have been made over into "residences" and poorest and cheapest of tenements showed in many a window honor flags and service flags. It's a big country and strong for peace but with one idea when war has to be made for liberty.

Corn is a big crop generally. Some growers have however been disappointed and occasioned loss by buying seed from other states. In some sections seed was sent in little better than their own soft seed, and in addition not acclimated. Some fields were long on stalks and leaves and short on grain.

But speaking of fodder. There are millions of tons (millions is doubtless correct but is not intended to be taken literally — oodles would mean the same) of fine feed wasted this year. It was never cut. The huskers are now in the field taking the corn from the standing stalks. Stock will glean after but with little satisfaction or profit from the roughage.

There are some "banked up" houses. It is in Iowa. We recall in Ohio that our banking was usually the soil shoveled up against the cellar wall to prevent the frost "penetrating" the cellar. Even with the banking up I recall how Jack Frost's finger marks used to appear on the inside of the cellar walls after a few days of below zero weather. But these Iowa houses are banked with coarse strawy manure appearing stuff. May be effective but not aesthetic.

The Liberty Fair

By R. P. Royce

LAST week the story of the Liberty Fair live stock show was given considerable space, but our readers are not to infer that the live stock exhibits constituted the whole show. Far from it.

The Liberty Fair was a very complete exposition of the resources of California in general, and Southern California in particular. If any branch of agriculture or any manufacturing industry operating in that part of the state was overlooked such omission was not noticed. Indeed, the wide range of activities represented was one of the striking features of the show—and when one considers that this year's show was the initial effort and that it is planned to make the Liberty Fair a permanent fixture, and that, as such things go, each succeeding year will bring improvements, one wonders to what proportions, say, the "tenth annual," will reach. That the men back of the project were men of large vision was demonstrated on every hand; that they had imagination was likewise evidenced. Perhaps the fact that the established plant at Exposition Park was almost ideal for the staging of such an event went far towards its success, but the management was not content to accept things as they found them, they went about improving them.

New buildings, aside from the large and beautiful brick structures, were needed and in the construction of these additional buildings a definite style of architecture was followed together with a fixed color scheme—even to the ticket boxes and lemonade stands—all were cut from the same pattern—and the final result was a rarely beautiful setting. The only jarring feature on the grounds was the midway that stretched through the infield and served to connect the north and south sides of the park.

* * *

The fair was planned as an aid to increased food production and with that idea foremost the greatest effort was made to attract exhibits that would stimulate food production through actual demonstrations of efficient methods. Every educational agency was invited to aid and the fine response served to lift the Liberty Fair from the commonplace to a high place as a force for better agriculture. From the time one entered the main gate the educational phase of the fair was manifested. In a special building was housed the notable war-time exhibits of the college of agriculture of the University of California, which was under the direction of a corps of food production experts.

The schools of Los Angeles and the Southern part of the state installed large and attractive exhibits covering every angle of their work.

The agricultural and horticultural exhibits were housed in one of the new buildings. It was in this department that the county exhibits were found. Many of the southern counties were represented and, with the probable exception of the State Fair, the showing made by the various counties was easily the most extensive made in the state. No state produces a wider range of agricultural products than does California, but it is not until one looks over the assembled resources of a number of counties that a real appreciation of this fact is gained. One finds about every kind of fruit, of course. The field crops embrace about everything from cotton to broom corn. What wonderful possibilities has a state that can produce, to such excellence practically every major field crop of many states. Alfalfa—no other forage is needed. Corn, wheat, oats, barley, all the sorghums and kaffirs, beans, rice and cotton!

Fragrance of the piney woods drew the visitor to the forestry exhibit. It had a separate building of the type of the temporary fair buildings, but was unusually attractive with its broad eaves thatched with palm leaves from which hung a border of pine cones. About the walls, outside and in, were small trees and branches of pine and spruce and California redwood, making of it a veritable booth of Christmas greens. There were cleverly worked out representations of denuded mountain sides, soil washed away, water wasted; a reforested slope with young tree roots and undergrowth holding the soil, mulch forming, water being retained for the irrigation season; check dams in the mountain streams; channels at the mouths of canyons to spread the waters over the gravel for summer pumping; a model hillside farm with orange groves on its lower slopes, wind breaks properly planted, the upper and canyon "waste" slopes set to native trees to conserve the water supply. Then there were exhibits of forest fire fighting equipment, of a ranger's house, of the kitchen outfit for 200 fire fighters, lookout stations, etc. No wonder there were Boy Scouts there—and just plain boys—inquiring of the attendants how they might become rangers.

One of the main buildings was designated the "food products building" and in this building were installed all the manufactured food products exhibits. No finer or more varied display of the sort has been seen since the year of the exposition—and the big fact revealed by the exhibit was that most of the products were of California manufacture. Another large new building, designated "manufacturers building," contained scores of exhibits, other than food products, made in California. About everything made in the state from cotton underwear (knitting machines in operation) to 12-inch pumps had a place.

* * *

No California fair is to be expected that does not feature tractors—for, as has been remarked, this state is the tractor manufacturers' heaven. No suitable field was accessible for actual demonstration, but the tent in which were installed over a score of machines together with a big display of accessories was usually found to be crowded with interested fair visitors. Judging from the remarks one overheard in the tractor tent there is the prospect of a tremendous business just ahead for the tractor manufacturer, but the big question in the minds of the prospective buyers revolves around the point as to whether with the ending of the war will come a material decrease in prices. No one seemed to know the answer.

Over in the armory was located the remarkable war exhibit made by the government. One needed almost a whole day to properly "do" this exhibit. Every phase of the war was represented in some way and even though the war is ended the display lost none of its interest.

A separate and special building was given over to the various war organizations.

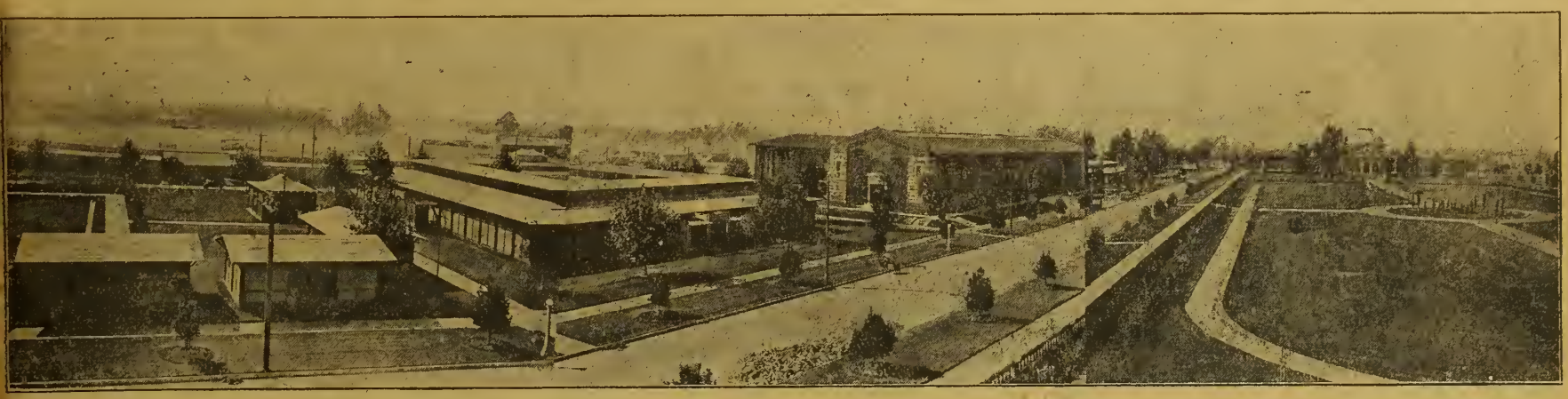
Each day was crowded full of interesting events, contests, meetings, etc. From the day that the fair opened to the public with a stirring military parade, in which several thousand soldiers and sailors participated, there was scarcely a dull moment. Each day was designated as a special day—either a southern city, county or organization day. The mornings were given over to an amazing number of contests, nearly every branch of athletics being represented. Each afternoon a racing card was furnished and during the last three afternoons a few horse show events were programmed. Each evening the gates were open and a magnificent display of fireworks was provided.

It was to be expected that the attendance would fall far short of what had been hoped for before the postponement. The public was loath to take any unnecessary chances with the flu, and while it is true that there was probably little danger, on account of the open air features, nevertheless the fear of infection kept thousands away.

And now the question arises—was the fair a success and will it become a permanent fixture? No definite answer can be given. From a financial standpoint, and measured in terms of dollars and cents, the fair lost money. It was not because Southern California is not ready for such an institution, or because of any fault of the management. Any loss registered must be charged directly and solely to the untoward situation resulting from the flu, and over which no control could be exerted.

The future of the fair has not been definitely settled, but there is little doubt in the minds of those interested but that this initial event will prove to be only a beginning and that a way can be found to perpetuate the show.

There is room in this state for at least two big fairs beside the state fair. Some feel that a winter date—a late January or early February date, would be better than a fall date. There are several very good arguments for and against such a plan. If San Francisco decides to make the California International Live Stock Show a winter show, then it might be advisable to have the Southern show either precede or immediately follow in order that a more attractive circuit would be possible. But in any event, no effort should be spared to establish the Los Angeles fair on a permanent basis.



CALIFORNIA HARDPAN

A discussion of the blasting of soil inevitably brings up that favorite family skeleton of the California real estate man, the hardpan areas in some of the best sections. If its existence be acknowledged at all it usually is in a hushed tone, with a "between-ourselves" manner.

Yet there is no real basis for being backward about the hardpan, for of all western soil types it is among the most productive when properly treated. Indeed, it is these very hardpan soils that are setting the pace, and owners should concern themselves with improved methods of blasting them and keeping them loose and fine, rather than with keeping their existence a secret with the possible idea of selling. Once the possibilities are understood the presence of hardpan will not cut down the value of any land.

The best method of blasting depends on the depth of the hardpan and on the nature of the over- and under-lying strata. The usual hardpan is only about two feet thick and begins one foot under the surface. The charges should go about two-thirds the way down through the hardpan, or about 28 inches. The size of the charge should be such as will break to the surface but not blow out a crater. The idea is to shatter and fine all of the hardpan to the looser soil beneath and to avoid wasting any force in the air.

Care should be used to see that the charges communicate. No unbroken ridges should exist between blasted areas, for they will interfere with the proper diffusion of moisture or irrigation water. It is folly to blast the ground only where trees are to stand, with the idea of permitting roots to penetrate more easily. When that object is accomplished the tree still will lack the benefit of the moisture

Continued on Page 650

Agricultural News Notes of the Pacific Coast

Northern California

Placer County has resumed holding of farm center meetings.

Rice in the Marysville section has been somewhat damaged by rains.

D. M. Brueck has been appointed assistant farm adviser in Napa County.

Ukiah shipped 2000 pounds of turkeys to San Francisco for the Thanksgiving market.

Olives in the Oroville district are somewhat touched by the frosts of early December.

Grape growers met in San Francisco December 14 to consider the prohibition situation.

The recent rain fall and snow have been welcomed by stockmen and water power concerns.

Satisfactory results have followed the use of a cotton picking machine in Butte County fields.

The California Almond Exchange expects to be able to save practically all the rain stained nuts.

The rice mill of the Globe Milling Company at Woodland is shipping out three carloads of rice daily.

Farm Adviser Brueck is assisting Farm Adviser Sweet of Butte County in organizing farm centers.

The James Mills Orchard Corporation of Hamilton has made a shipment of Berkshires to Chili.

Sales of hops in Mendocino and Sonoma Counties are reported at 25 cents, mostly for English markets.

Chico has invited the California Fruit Growers' Association to hold its convention during the fall of 1919 at Chico.

The California Rice Committee of the food administration expects to have all rice out of growers' hands by March 1.

The Tehama County Stock Association has disbanded and will reorganize as a unit of the California Cattlemen's Association.

The Sebastopol Growers' Association is now engaged in winding up a very successful season. It shipped out 300 carloads of apples.

A suggestion is made that rice fields in Sacramento County should be fenced so that stock can be pastured to glean the scattered grain.

The orange packing season of the Oroville district is practically over and indications are that the shipments will total about 150 carloads. This is only about one-fourth of normal.

Prof. I. J. Condit of the state university has been conducting demonstration in the pruning of orange trees at Carmichael Colony and Orangedale in Sutter and Sacramento Counties.

The mountain ranges of the El Dorado national park are reported by Forest Supervisor Kotak as being covered with grass. He says there are still a number of herds left on the range.

The Live Oak farm bureau has requested the supervisors of Sutter County to pass an ordinance placing a $10 license on all dogs. The object is to reduce the number of sheep killers.

President Stephens of the Pacific Rice Growers' Association announces that the outlook is for the planting of 250,000 acres of rice in 1919. This will double practically the acreage planted this season.

Central California

Orange testing is over in the Lindsay district.

An immense acreage has been planted to wheat in the Tulare Basin.

The new Terra Bella Cannery is putting out a carload of tomatoes a day.

Porterville's orange crop is turning out to be much larger than was estimated earlier in the season.

Vine pruning demonstrations will be held in Fresno County at Selma, December 20; Bowles, 23; Monmouth, 23.

Watsonville has shipped out 1650 carloads of apples. This is practically the same as last year's shipment to same date.

Thousands of little red ladybirds have been shipped from California to work on pests in French orchards and vineyards.

The California Prune and Apricot Growers' Association has filed suit against one of its members for failure to deliver his apricot crop.

Charles A. Whitmore of Visalia has been appointed a member of the state highway commission to succeed the late Henry Widemann, of Vallejo.

The recent rains are a fine Christmas present to the grain men. Most of the grain has been drilled in and presents a uniformly good appearance.

A meeting of cotton growers in the San Joaquin Valley will be held about the middle of January at Fresno. Many half-acre experimental plantings of cotton were made throughout the valley.

The Santa Cruz Poultry Association is conducting an egg laying contest at Santa Cruz. The plan is for 12 poultrymen to keep 10 birds in test for one year. A prize of $25 is offered the winning pen of pullets and of hens.

Rice growers at Oakdale, Stanislaus County, are preparing to plant rice in the late fall instead of waiting for spring. They hope in this way to secure a crop before the shortage of water in the irrigation ditches in the summer.

Some farmers in Merced were exercised because their seed wheat, treated with bluestone as a smut preventive, failed to germinate. They feared the seed had been spoiled but the condition is now generally attributed to slow germinating weather conditions.

At the recent state convention of the Farmers' Union at Modesto J. J. Hardie of Modesto was re-elected president; J. F. Breton of Morgan Hill, vice president; Fred Millard, Los Gatos, secretary-treasurer; Allen Talbot and R. A. Taylor of Modesto, executive committee; J. A. Orr, Ceres, legislative committee; and A. Kammerer of San Jose, member of California Producers' Union.

The San Jose Grange has selected for officers during the coming year: Master, Jas. M. Kenyon; overseer, Alice M. Abbott; lecturer, Chas. F. Tibbetts; steward, Geo. W. Calkins; assistant steward, J. P. Munger; chaplain, Nancy S. Lillick; treasurer, Geo. W. Worthen; secretary, Mary L. Church; gate keeper, W. W. Reid; Ceres, Harriett L. Pettit; Pomona, Ruth E. Dean; Flora, Helen H. Babb; lady assistant steward, Martha A. Tibbetts; pianist, Alice E. Winans; trustee for three years, Isaac Gover.

Southern California

Now is the time to spray for peach blight.

Los Angeles County will soon start a drive on ground squirrels.

Santa Barbara County has harvested the biggest bean crop in its history.

Mecca, Imperial County, has shipped out its early oranges and tangerines.

Many bean growers are wondering what will become of the market since the close of the war.

A short course in beekeeping was given at Riverside, December 16-21, by the state university.

The new warehouse of the Oxnard Citrus Association is now completed and ready to handle lemons.

Considerable feeling is reported in Imperial Valley against the increasing number of Hindu settlers.

The Oxnard sugar factory is offering contracts to growers at $16 on 20 per cent beets on 9 cent sugar.

The Covina Orange Growers' Association has paid its members this year a half million dollars for oranges shipped.

Mixed carloads of vegetable products are urged as a means of increasing the market for Imperial County winter vegetables.

Japanese farmers are organized under the name of Nippon California Farmers' Association, with headquarters in Los Angeles.

The walnut season is just over in the Hemet Valley. The Walnut Growers' Association has handled 127 tons of nuts. This is a short crop.

Rhubarb growers of Los Angeles County have formed a marketing association with headquarters at the Terminal Market in Los Angeles.

There will be farm bureau meetings in Imperial County at Magnolia December 20; Eastside, 23; South Fern, 25; Laverne, 26; Mount Signal, 27.

Meetings of the Los Angeles County farm bureau will be held at Covina, December 21; Burbank, 23; Owensmouth, 26; Pomona and Inglewood, 27; Lankershim and Puente, January 2; San Fernando, 3.

The Ventura County Threshermen's Association has been organized to carry cooperative insurance risk under the workmen's compensation law. The association is not incorporated. M. W. Duval of Saticoy is the secretary.

The December issue of the Los Angeles farm bureau contains a valuable supplement giving the various cooperative marketing associations in this state with officers and headquarters, together with a short statement of their aims and work.

The release by the government of packed tomatoes commandeered for army use has brought down the price on these goods and tomato canners are wondering where they will get off. The Hemet-San Jacinto Growers' Association was so fortunate as to make sale of its entire pack to the British government.

An Orange County correspondent reports little damage to oranges from the recent high winds. Fortunately the wind was preceded by a generous downpour that soaked the ground, preventing the blowing up of dust and particles of sand that would cut the fruit and send it into the cull bin. A few limbs on the unprotected sides of the trees were broken.

The Coast and General

Representatives of dairy interests of eleven states will meet in convention at Boise, Idaho, February 10 to 12.

The Oregon State Horticultural Society held its thirty-third annual convention at Roseburg the first week in December.

The Northwest Livestock Association has become a member of the American Association of Fairs and Expositions.

Idaho Falls, Idaho, has a new dehydration plant and is now putting out potato flour, most of it being used by the army.

Yuma cotton buyers have agreed to buy on re-weights. The cotton market is picking up a little. All gins are running to full capacity.

The by-product plant at Wenatchee, Washington, formerly operated by the Skookum Packers' Association, is now under private management.

Construction work on the Columbia River highway between Hood River and Columbia Locks has been shut down on account of weather conditions and will not be resumed until next spring.

The federal department of agriculture has estimated this year's commercial apple crop at 24,400,000 barrels. Washington is the biggest producer with over 12,000,000 barrels. California has 3,300,000 barrels.

Last year up to November 1 the Hood River Apple Growers' Association had shipped out 111,143 boxes of fruit, as compared with 234,959 boxes this year. Last year growers of the association up to that date had delivered to the association 318,449 boxes, while deliveries this year reach 435,998 boxes.

The apple shippers of the Wenatchee district loaded and turned over to the Great Northern 75 cars of apples in one day and night retently. In some cases the sidings were emptied of loaded cars twice during the 24 hours, which represented some unusually swift work on the part of the warehouse and loading crews.

The largest potato deal ever consummated in the Yakima Valley was made when the Yakima Potato Growers' Association agreed that a Chicago firm should market the entire 1918 crop held by members of the association. Growers in the association have 3000 acres planted, from which the crop will be between 1200 and 1500 carloads.

Following the sixth annual meeting of the Washington irrigation institute, to be held at Yakima December 17 and 18, there will be a session of the Washington State Land Settlement Association. At the land settlement meetings plans for the development of the state by the returned soldiers, under some form of national aid, will be discussed.

During the shipping season, which is about completed at Yakima, Washington, 110 cars of winter pears were rolled from Yakima, according to the report made recently. The winter pears this season sold for between $45 and $50 a ton, so the total crop represents a gain of about $123,000 paid to the Yakima growers. Most of the winter crop was Winter Nellis pears, which were exceptionally good in quality this year, while the trees bore heavily.

The Future of the Long Staple Cotton Industry

Written for California Cultivator by M. E. Bemis

LONG STAPLE cotton growers who last spring planted in the bright sunshine of a dawning hope of 70 cents to $1.00 cotton, are now gathering in the gloom of a clouded market that unenthusiastically offers 55 to 60 cents a pound for what is confidently believed by growers and government experts to be the equal, if not the superior, in length of fibre as well as strength, of any cotton grown anywhere in the world. These are the cold unvarnished facts, pretty well understood throughout the Long Staple cotton growing sections. Some blame the government, some cuss the kaiser, some say it is the manipulation of the middlemen, some attribute it to a lack of sympathy for the grower on the part of the financiers.

American-Egyptian Cotton in Bloom
The man is six feet tall.

Since wiser men than I, and men who are in close touch with the government, the buyers and the bankers, are not agreed, it would seem that we might be excused in approaching the subject with an open mind and assuming at the outset that the condition of the cotton market at the present time is like the uncertain prices of some other commodities that have become the victim of changing conditions in part made necessary in prosecuting to a successful finish the Great War, and now the aftermath of war, the conditions incident to approaching peace. We can better appreciate the part that the war has had in making or unmaking the market by recalling that the price of cotton in the fall of 1914 was down to 18 cents a pound and a slow market. Again, the demand for Long Staple cotton for automobile tire fabrics and the fact that the exigencies of war made it necessary to restrict the imports of Egyptian cotton, brought the price up to 70 and in some cases for extra choice to 80 cents a pound last year.

In a consideration of the several factors that combine to make the market for Long Staple cotton uncertain and the price a gamble with the grower looking for the next deal and wondering whether it will be a pair of aces or a deuce, it is well to consider first of all the several types of Long Staple cotton and the uses of these varieties which have created demands, and the present as well as past crops and supplies.

Of the strictly Long Staple varieties of cotton, we may roughly group them into three divisions: the Egyptian, imported from Egypt; the Arizona-Egyptian, now known as the American-Egyptian, and the Sea Island. All of these have a length of staple of about 1⅜ inches up to 1⅞ inches, the several varieties of each of the three types that make up the group of Long Staple varieties showing considerable variation both as to quality of fibre and length of staple.

Taking up first the Egyptian cotton, we used in the United States, in the season of 1913-14, 151,091 500-pound bales; 1914-1915, 181,211 bales; 1915-1916, 269,324 bales; 1916-1917, 259,180 bales; 1917-1918, 136,824 bales. This present season the imports have been restricted to 120,000 bales (80,000 750-pound bales); there was on hand at the beginning of the season 67,280 500-pound bales. Most of the allotted amount of Egyptian cotton has been delivered so that the amount consumed for the next few months at least must come from other sources. So far as known the United States government has not used any Egyptian cotton for any war materials. The price of Egyptian cotton as fixed by the British and Egyptian governments is approximately 48 cents a pound at Alexandria, the cost of bringing it to America is about eight cents a pound, to which must be added insurance, exchange costs, brokers' and dealers' profits and exportation, making the price to the mills about 60 cents.

The Arizona or American-Egyptian cotton has now been divided into five grades; Number One, or Fancy; Number Two, or Extra; Number Three, or Choice; Number Four, or Standard; Number Five, or Medium. The official staple lengths are inch and a half, inch and five eighths, and inch and three-quarters.

The yields and prices since it was first grown in the Salt River Valley are as follows:

Long Staple Cotton Boll

	Bales.	Av'ge Price.
1912	240	20 cents
1913	2,200	.....
1914	6,200	16 cents
1915	1,150	22 cents
1916	3,350	43 cents
1917	16,200	69 cents
1918	45,000	.....

This year some 3000 bales will be produced in California.

Last year for the first time the Arizona Long Staple Egyptian cotton was grown outside Arizona, California growing about 3000 acres and producing about 1000 bales. This year, the acreage in California is about 5000 and the estimated production 3000 bales. Early government estimates of 45,000 bales (this includes California and the acreage in the Yuma Valley and also in Pinal County of Arizona) is likely to be somewhat less owing to frosts in the Salt River Valley which came this year about three weeks early. The estimates of the crop in the Salt River Valley by those best in a condition to know, places the production at 30,000 bales probably for the state, or a total in America of 35,000 to 40,000 bales.

The production of Sea Island cotton last year was 92,000 bales. Early estimates of this year's crop place it at 65,000 bales.

Later estimates on the production of Sea Island cotton place the production much lower, possibly it will not be more than 40,000 bales. Some Sea Island cotton has been used by the government in the manufacture of airplane fabric, balloon cloth and cloth for gas masks. Just what this amounts to in terms of bales cannot be stated, but as compared with the amount consumed by the mills manufacturing automobile tire fabric, it is probably small.

A glance at the above figures of production and imports of Long Staple

Continued on Page 636

Hauling in the Cotton to the Gin

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FROM THE ROOTS UP

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Better service is assured by the advertiser if when writing you mention the California Cultivator.

The Care of Cuts and Wounds on Walnut Trees

Written for California Cultivator By J. B. Neff

THE cuts in taking off large branches and the damages by storms and farm implements are often responsible for the short life of a tree, and also for the lessened production while the tree drags out an unprofitable existence. Stubs are left in cutting off the larger branches and these decay instead of growing over. The decay gets into the body of the tree, causing weakness and final loss of an otherwise good tree which might have lived indefinitely. The same may be said of wounds made by the plow or harrow. Branches which are too heavy to be held up with the hand to prevent splitting down should have the first cut made at some distance from the trunk and a second cut made flush with the trunk, leaving a smooth surface which can callous over in a few years.

All cuts on large branches should be made with a fine tooth saw as this leaves no bruised wood and heals more readily than a bruised surface.

Cuts which will not heal over within a year should have a covering of some kind of paint, either lead or other mineral substance is preferable but asphaltum paint will answer if applied frequently, and in all cases the trees should be gone over once a year to renew any uncovered places.

Trees which have been neglected and are already showing decay should have the decay removed and all the wood covered with some substance which will prevent further decay. The decayed place should then be filled with some substance which will prevent the entrance of water and at the same time have some pliability.

A convenient instrument for removing the decay is a carpenter's gouge, outside ground and about an inch across. The sterilizing can be done with Bordeaux paste. The place from which the decay was removed can then be filled with asphaltum and fine sawdust prepared as follows: Break the asphaltum in very small pieces and dissolve in gasoline, stirring the mixture and adding asphaltum until the substance is of the consistency of thick cream. Then add the fine sawdust until no more can be worked in the mass which will be ready for use.

This mass of asphaltum and sawdust should be of such consistency that it can be broken and will not run when handled. The method of use is to fill the hole and, with a hammer and blunt ended stick tamp the hole tight and fill flush with the wood of the tree. The gasoline will evaporate and leave the mass of asphaltum and sawdust which will prevent the entrance of water and at the same time will not present any sharp edges to cut the cambium of the callus which will grow over. Cement has been used for the same purpose but is not desirable for walnut trees and asphaltum alone will get soft enough to run on hot days.

Places that have had the bark removed by the plow should be kept thoroughly painted until healed over, or if decay has begun should be treated as in the case of decayed branches. Repair of an accident to the trunk of a tree can often be made, if taken at once, which will not leave a scar. The loosened bark can be put in place and fastened with small nails, the smaller the better, and a coating of paint applied over the break. Do not at any time use coal oil, distillate or any penetrating oil on the bark of a tree in such quantities as to reach the cambium layer.

Government Contract on Prunes

READJUSTMENT and placing ourselves on a peace basis will call for patience and possibly cause some financial loss. Immense orders placed by the war department are now being reduced and food products are sometimes released to other lines of trade. But embargo and uncertainty is affecting conditions sometimes seriously.

Regarding the prune situation we quote from a statement made by General Manager Coykendall of the California Prune and Apricot Growers. He says:

"The work of our association has been very much embarrassed by conditions developing from our government contracts. Government requests respecting prune sales have been accepted by us and other packers as positive orders and all actions have been regulated in harmony therewith. Their request to make no sales to the general trade of all sizes from 30s to 100s has been complied with. Early in the season their orders from us amounted to 31,000,000 pounds, but later they reduced this to 18,000,000 pounds, at the same time ordering all packers to hold all goods subject to their orders. Some time later they released to the trade 30-40s and 90-100s. This release, of course, necessitated the readjusting and prorating sales to the trade.

"Of our government orders, 3,600,000 pounds were to be canned for the navy, leaving 14,400,000 pounds to meet army requirements. Of this amount over 7,000,000 pounds have been shipped to date and 5,300,000 pounds are packed, marked with government markings and strapped with iron by government orders, and just at this point the government cancels all contracts. This, of course, means an entire readjustment of trade orders. The real trading season for prunes is from September to early in December. According to contract, the association receives all marketable prunes as early as offered and pays the initial price on delivery, which this year is a six-cent base price. Paying out six to ten times as much money as the government was paying to us made financing very difficult. The continued uncertainty as to the intended action of the government in receiving and paying for fruit, made it still more difficult for the association to adjust its financial affairs. Many of our members were justly impatient at what seemed to them unwarranted delays in payments, yet we feel sure that a full knowledge of the nature of these hindering conditions, which were beyond our control, and some of the most annoying of which were entirely beyond any possible foresight, will tend to change impatience to sympathy and confidence.

When this release of 15,000,000 pounds of prunes came and also the release at the same time of tomatoes, canned fruits, peaches, raisins, beans, etc., the association was doubtful as to just what the market might do. However, we have held all along that these goods belong to the government and that we should sell them for the account of the government and that any loss thereon should be borne by the government.

"In view of this situation we have asked the authorities to lift the embargo on exportation of dried fruits into Canada and Europe, as this would stiffen the domestic market and give our buyers confidence.

"The food administration has agreed to make a resurvey of the situation in two weeks and if the domestic market shows any surplus, will release the embargo on dried fruits. This would greatly help the clean-up of all dried fruits in California. And as a further ground of complete confidence we can state that orders are coming in so rapidly from our original buyers that every pound of prunes will be moved at the full contract price."

DON'T LEAVE OLD PAPER TRAYS LYING AROUND

This is the time of year when large sections of the vineyard landscape are disfigured by dirty old paper trays swept by the wind in every direction, blowing from one vineyard to the next and littering even roads and highways. A paper tray, tucked under a vine, is an ideal breeding place for thrips and other insects. Get a three-tined fork and stick it through the papers until you get all the papers you can handle, then set fire to them. You can clean up 20 acres a day this way.—Sun-Maid Herald.

MEXICO SELLING US PECANS

Several carloads of pecans have been sold in the United States this season, coming from Old Mexico. This year's crop is good. In view of the short crop in Texas the Mexican nuts are finding a waiting market at good prices. The basket trade in these nuts was very good before the days of the revolution—if one can think back that far—and is now coming to the front again. Cheap labor makes the Mexican nut an easy competitor of the American.

GRAPES CAN NOW BE SHIPPED TO NEW ZELAND

Restrictions on sale of grapes from Canada and the United States have been removed, except that all shipments received must be accompanied by a certificate from the shipper and another from the department of agriculture that the vines are free from infection.

This is expected to open up another fair market for Malagas and Red Emperors which of course come in the opposite season to that of the Antipodes.

SHASTA LOSES HORTICULTURAL COMMISSIONER

Geo. A. Lamiman, who for the past eight years has been horticultural commissioner of Shasta County, has resigned from that office and will take charge of the orchard properties of the Silva-Bergtholdt Company. Mr. Lamiman has been a practical horticulturalist for over 25 years and has had wide experience in soil, insect pest and plant disease work.

Chuckawalla Valley, with nearly a quarter of a million rich acres, hopes to secure irrigation under the Carey act.

The Slug Pest

To gardeners who fought the slug last year with lime and salt, with dust and despair, the following article may not give much new light but it may serve to show that they have company in their distress and that the thing has to be fought to a finish.

I was talking recently to a Japanese nurseryman, and the question of slugs came up. I said, "How do you get rid of slugs?" He replied, "Oh-h-h, poison—bran—better, you get up twelve o'clock night and pick him!" That was the conclusion I reached last year. But it is a case of try everything.

The eggs are deposited in masses, held together by a light colored substance, in moist places, such as under decaying boards, flowerpots, and refuse or under clods. The newly hatched slug is a little less than half an inch long and about one-seventh as wide as long. It is dull white, showing no discoloration except where the dark eyestalks can be seen through the transparent mantle. As the animal feeds it becomes darker until in about a month it is dark brown and the black spots begin to appear. In some cases these spots, which are arranged in a line, disappear and the body is of a solid color. When full grown the slug is nearly seven inches in length. Among the slug's few natural enemies is the common toad.

Owing to its habit of feeding by night and concealing itself during the day, it is very difficult to control. It will avoid food of a coarse nature. The application of arsenicals to the plant is impractical, chiefly because attack is local and the creatures avoid most poisoned substances. The use of poisoned baits is not entirely satisfactory because of the slowness of the slug to change its diet unless this becomes necessary to prevent starvation. The methods of control to be used vary according to the location in which the slugs feed and the nature of the food plant. In mushroom beds it is not practical to employ a poisoned bait because the slug prefers fungi to all other foods.

Where large plants are being injured poisoned baits may be employed with fair results. For this purpose baked or boiled white potatoes sprinkled with white arsenic have been found effective. This bait should be placed so that one potato will be in about two square feet of the affected area. Inferior potatoes are quite as useful as sound ones, and large tubers or roots should be sliced.

Wherever this pest occurs cleanliness will accomplish much toward its riddance. In small gardens or in green house they should be sought out at night with a lantern or pocket flashlight. The slugs at this time may be found feeding or crawling about in search of food. At such times they can be easily collected and destroyed. In the daytime they may be traced to their retreats by the trail of slime which they leave behind.

Treatment in the Feld

When abundant in the field or garden the slug is even more difficult to control than in the mushroom house or greenhouse, and the only solution of the problem consists in thoroughly cleaning up the hiding places of the pest, around the edges of the garden under old boards and stones, and in any place that is cool and moist. These places should then be sprinkled with lime, and where practicable lime should be applied directly to the area and plants on which the slugs are feeding. In time this will drive them away.

Japan is now making efforts to increase her wheat acreage greatly; also to build ships for carrying Japanese and Australian wheat in the Pacific trade.

CROP SYSTEMS THAT INCREASE YIELDS

By the introduction of cowpeas, soy beans and other legumes, and by planning the cropping system so that two crops can be grown on the same land in the same year, many farms can be made to produce greater yields than under the present cropping system with no additional man power. Thus, two men with a team, who under a cotton and corn system can farm but 33 acres of land, can handle 50 acres and raise 62 acres of crops under a system providing for a four year rotation including (1) cotton with a winter cover crop, (2) cowpeas, (3) oats or wheat followed by cowpeas, and (4) corn.

It is important that men and teams be kept reasonably busy at profitable work. Cotton requires little team work after the first of August, but a great deal of man, woman and child work; thus a system of cotton and corn alone is markedly inefficient in its use of horses and mules.

BROOM CORN

The amount of broom corn brush which can be raised on one acre depends almost entirely on the kind of corn, care of the crop, fertility, etc. The average production seems to be somewhere between 500 and 800 pounds per acre. One ton of good broom corn brush will produce 100 dozen ordinary sized brooms. Before going deeply into anything of this kind, it would be well to make a thorough study of it. The bulletin described will furnish ample information without cost.

THE CLOCK

Tick, tick, man, be quick,
There, you lost a splendid minute—
What a superb chance was in it.
I am El Dorado—mine me.
Virgin hordes of fortune line me.
With my lavish hands I measure
Fame and strength and joy and treasure.

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such as these are grown only on our foot-hill locations.—Note the good roots—for hardiness they have no equal.

We have a fine lot of Mission and Manzanillo trees, both on Picholine roots and grown from cuttings. We have had splendid success on all Olive plantings—a most important assurance to you.

Submit a list of your tree wants for special quotation. Do it right now.

We have also a complete assortment of Shipping Plums, Cherries, Prunes, Bartlett Pears, Fall Pears, Peaches, Almonds, Apricots, Walnuts, etc.

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Heider Model D, 9-16 H. P. Sold with or without plow attached. One foot lever controls automatic power lift of plows. Gets into fence corners and plows **ALL** the field.

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Burns Kerosene or Gasoline

is the **unusual** tractor. And it gets unusual results. Its friction transmission is one of the biggest successes ever put in a farm tractor. You cannot strip the gears—nor lose power turning needless parts. You get your engine's best all the time without strain, and without wasting fuel. No sudden jerks in starting the load behind the drawbar or the machinery on the belt. Burn **Kerosene or Gasoline.** Especially designed manifold. Switch from one fuel to the other without carburetor changes. The Heider is the thoroughbred among tractors—backed by its own experience of 11 successful years and 64 years of building Rock Island Farm Implements.

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Pruning Old Orange Trees

Written for California Cultivator By J. B. Neff

ORANGE trees are sometimes pruned in the form of a well built haystack standing on a platform supported by a single center pillar. This shows the pruner's artistic ability but is ruinous as far as the owner's bank account is concerned. The most profitable form is that of a deeply corrugated column, though not always attainable. This allows light to reach the interior of the tree and furnishes the largest possible fruiting surface on the outer part of the tree. When the corrugated form can not be produced to the full height of the tree smaller openings can be made by cutting out branches which start two or three feet back from the outside of the tree. It must be remembered that the small leaves are caused by the root system being unable to furnish material for the excessive number of leaves which are found on the very large number of small twigs and the remedy is to lessen the number of leaves by reducing the number of twigs since small leaves and fine fruit are not found on the same branch.

While very large oranges are usually sold at a discount there is seldom a loss on the large sizes and usually a very nice profit over the amount received for the same number of oranges of smaller size. If we take 100 boxes of size 176 to the box at $4.00 per box we have $400 and then the same number of oranges (17,600 oranges) in a size making 200 to the box we will have only 88 boxes which at the same price are worth but $352. There is a saving in picking, packing and boxes on the small size of about 50 cents a box, or $6.00, but after making this allowance there is a difference of $62 in favor of the large size while the difference in diameter of the two sizes of oranges is but one eighth of an inch. If we take size 176 at $4.00 per box and size 126 at $3.00 per box, with a difference of one-quarter inch in diameter, we have 140 boxes of size 126 worth $420, with a cost of extra boxes and work amounting to $20, or the same net amount as received for 100 boxes of 176 size.

When the price of 176 and 200 sizes is $3.00 per box there is a difference of $36 net in favor of the large size, and at $3.00 per box for 176 size and $2.50 per box for 126 size there is a net return of $20 in favor of the large size for each 17,600 oranges.

While it might not be possible in all cases, and not desirable where the oranges are already as large as 176 size, to make an increase of size as much as one quarter of an inch in diameter, it will always pay to increase the size of smaller oranges, which can often be done by some additional water or an extra cultivation.

The Nitrogen Outlook

Written for California Cultivator By F. H. Mason

IT IS generally conceded that the great nitrate beds of the Tarapaca and Tacoma Valleys in Southern Peru and Northern Chile are approaching exhaustion. They were discovered by the Spaniards at the commencement of the nineteenth century, but it was not until 50 years later that the scientific exploitation of them was started. Since then the industry has increased steadily, and latterly by such leaps and bounds that for the last few years the annual output has approached two and a half million tons of saltpetre, averaging 95 to 96 per cent of sodium nitrate.

The deposit extended for 260 miles, and an average distance of 14 miles from the coast of Northern Chile and Southern Peru. It averaged two and a half miles in width, and from three to six feet in thickness, while there was an overburden of 14 to 20 feet of sand and loose rock. The nitrate earth, or caliche as it is called locally, is mined or quarried in the usual way, broken into small pieces, and digested in iron vats, heated by steam pipes, to extract the nitrate.

The valleys are exceedingly arid, rain occurring only every three or four years, so great care has to be exercised in the use of water. When the solution is saturated, that is when it will take up no more nitrate, it is transferred to crystallization vats and allowed to cool when about half of the nitrate separates out in crystals. The solution, or mother liquor, as it is called, is then pumped back to the treatment vats and made to dissolve the nitrate from a fresh batch of caliche, when it is again returned to the crystallization vats. In this way the solution is used over and over again until it becomes too foul for further use.

While deposits of both sodium and potassium nitrate exist in other parts of the world, they are negligible compared to the Chile deposit. To all intents and purposes it may be said that the world has been drawing its nitrates from this great deposit for the last 50 years. Eighty per cent of these nitrates, it is claimed, have been empolyed for manurial purposes. Now, unless other deposits are found in the neighborhood or a method is devised for profitably treating the large quantity of material in the present deposit that runs less than ten per cent of nitrate and cannot by existing methods be treated profitably, the end is in sight. The pessimist gives it five years, the optimist 50. A mean between the two probably will hit the mark.

When the United States entered the war it was dependent entirely on the Chile saltpetre beds for nitrate from which to make nitric acid for the manufacture of explosives, such as guncotton, tri-nitroglycerine, tri-nitrotoluene, picric acid, and black powder. Realizing the inherent danger of the 5000 mile ocean journey that separated the deposit from the United States, the government appropriated first $20,000,000 and later $200,000,000 for the erection of plants for the manufacture of nitric acid and nitrates from that inexhaustible source of oxygen and nitrogen, the atmosphere.

After a great deal of pow-wowing, during which probably every up-to-date city from the Atlantic to the Pacific and from the Canadian to the Mexican border set forth its claims, the Muscle Shoals district in Alabama was selected for the principal plants, while several small plants were given to other places.

The development of water power was started at Muscle Shoales that when complete will give 660,000 horse power. Of this 260,000 horse

power will be used for the nitrate plants, while the balance will be employed for other electro-chemical industries.

Two plants are in course of construction at Muscle Shoals. At the smaller one ammonia will be made synthetically from atmospheric nitrogen and hydrogen derived from the electrolysis of water, and the ammonia will be oxidized to nitric acid by the aid of a platinum catalyst. The nitric acid thus made will be neutralized with ammonia, the final product being ammonium nitrate, which contains 35 per cent of nitrogen, and is the most concentrated nitrogen fertilizer that can be applied to the soil. This plant is designed to produce 200,000 pounds of nitric acid per day. When it is finished two other plants of like capacity are to be erected.

At the larger plant the nitric acid will be made by a more indirect though cheaper method. First, lime will be treated in an electric furnace with anthracite coal or coke for the production of calcium carbide: the carbide will be pulverized and treated in retorts, heated internally by the passage of an electric current through carbon resistance rods, with nitrogen for the production of calcium cyanamide, or nitro-lime; and the calcium cyanamide will be treated with superheated steam, which forms with it calcium carbonate and ammonia. The calcium carbonate can be used over and over again for the manufacture of carbide and cyanamide, while the ammonia will be oxidized by catalysis, as at the other plant, to nitric acid. This plant is designed to produce 2,000,000 pounds of nitric acid per day.

The nitrogen for use at both plants will be obtained from the atmosphere by first liquifying air, and subjecting the liquid to fractional distillation. Liquid nitrogen boils at a temperature of 190 degrees Centigrade or 250 degreens Fahrenheit, while liquid oxygen boils at 183 degrees Centigrade or 329 degrees Fahrenheit, so a sharp separation can be made. In fact, nitrogen containing less than four-tenths of one per cent of impurities is being made in this way at a number of different places.

In August the government closed down construction work on the water power plant, but not on the nitrate plants. It was claimed at the time that it would take three years to complete the plant, and it was therefore a non-essential—the labor and supplies being needed more urgently in other directions.

It is to be hoped work on the plant will be started at the earliest possible date. For the past four years nitrate has been used principally to make fuel for engines of destruction. Its price soared to a height that made it prohibitive to the farmer, and, consequently, the soil throughout the United States and the world generally has been depleted of that very essential invigorator of plant growth. It will be evident to all, then, that the products of these plants are needed throughout the whole country.

The smoke of battle has not sufficiently cleared to enable us to know what the nitrate situation is in Europe, but it is more than likely that all the nitrate manufactured there will be needed for home consumption. In 1903 the manufacture of nitric acid was started in Norway by direct combination of the oxygen and nitrogen of the atmosphere in an electric furnace, and immediately before the war nitrates were being produced at the rate of about 150,000 tons annually. The process, however, is an extravagant one, it requiring about two horse power per year to produce one ton of calcium nitrate.

A more promising source of nitrogen for fertilization of the soil is by the direct use of calcium cyanamide. While this material cannot be applied to growing crops on account of its caustic properties, for grain and such crops when plowed into the soil before sowing it possesses an advantage over nitrate of soda in that it yields up its nitrogen gradually. Calcium cyanamide decomposes slowly in the soil, forming first cyanamide, then urea, then ammonium carbonate, and finally nitrate. Then, too, it is not readily washed out of the soil during heavy rains, as nitrate often is.

The manufacture of calcium cyanamide was started in Norway in 1907. It is now manufactured at several places in Europe, America, India, and Japan, and the world's output immediately before the war was in the neighborhood of a quarter of a million tons per year. Of this Europe is by far the largest producer, the output at Odda, in Norway, alone being 90,000 tons. Calcium cyanamide contains from 20 to 22 per cent of nitrogen, as opposed to 16 per cent in Chile saltpetre and 12 to 13 per cent in "air saltpetre," as the Norwegian product is called.

With the cessation of hostilities it may be expected that the price of Chile saltpetre will drop, but the demand will be considerable for some time, and the drop is likely to be gradual. Undoubtedly all the warring nations have allowed their soils to become deficient in nitrogen, in order that the nitrates might go to the making of munitions, so there is likely to be a general demand and a heavy drain on the Chile saltpetre beds. With this source already approaching exhaustion it is urgent that the plants under course of construction in this country should be in operation at the earliest possible date.

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About Avocados

Written for California Cultivator By Ernest Braunton

THE avocado is here to stay and its tribe will increase. Over 30 years ago the writer ate avocados in Los Angeles. Fruits were then brought up from Mexico and South America in occasional small lots. In some cases little was left but the seeds and it is indeed strange that more seeds were not planted, for even seedlings were rare in Los Angeles 20 years ago.

Today a thousand acres of budded trees may be found in the Southern end of the state and their numbers are enjoying heavy annual additions. In regard to orchard planting I have no advice to offer, not having given any attention to supply and demand, nor desiring to offer business advice to my readers. If all had the same appetite for avocados that I have all available land would be planted to them. Though I like oranges, I have, during the past year, eaten at least ten avocados to one orange and am still eating avocados while good navel oranges grow in my garden ungathered. How far the general public shares my taste I cannot say. Nearly everyone who has eaten a good California avocado has liked it. The fruit must first be soft enough so that the flesh may be spread upon bread as easily as butter at ordinary house temperature. Green avocados are not more palatable than raw potatoes. In the future I will tell you much of avocados. The time for present season planting has not arrived.

Garden Design

In laying out your garden have a purpose in view, a purpose for everything you do. Some wind paths about merely because they think paths should be winding, and have no real or reasonable purpose in so doing. Without purpose gardens are laid out to suit the whim of the worker, a poor reason for doing anything. Better leave the work until you have some definite ideas of what you want and what should be done. The garden need not be planned today, or next week or next month. The world will continue to revolve and you will pursue the even tenor of your usual course even though the work is delayed until you gather your senses. Gently curving lines are the more beautiful, but they should at least appear best or necessary or we have no argument against straight lines, which we must confess are the short distances between two given points.

The use of straight lines often prevents one from doing some very silly things in laying out a garden. Straight lines may therefore prove a refuge. Or, again, they may prove a discipline, keeping the worker both figuratively and literally in the straight and narrow path of righteousness. If you lack purpose and have no well defined idea of what should be done, the straight line is indeed a refuge, for it will conceal from all, including yourself, that you were ignorant of the needs f the case. A good garden design, unless it is very small or in great need of formality, is vastly more natural, more comforting, more satisfying, and more attractive, if laid out with gently flowing curves in its main parts. But if you don't know how to lay it out confess your inability and "make straight your way."

Identity of Plants

Plants, fruits and other growing material falling under my department will, as far as my knowledge goes, be cheerfully identified or determined if good material is sent or left. When someone leaves a spray of twigs and foliage which in appearance are borne on a score or more species, it is too much of a task to "run them down," and often impossible, so no attempt is made. Foliage, unless of very marked character, is altogether insufficient for identification and will baffle the attempts of the best plant sharps. The fuller the material the easier is the task of determination. Let us have foliage, nowers and fruit if possible and the job will be tackled with a considerable amount of glee.

Did'st ever think we should act in political matters as we do in science? The scientist, on any question, makes long inquiries and studies the subject deeply before he makes up his mind and delivers an opinion. But all of us rush to the polls and vote one side or the other when in many cases we know nothing of the matters at stake. We vote for a measure we have not looked into, merely because it is put forward by the party with whom we affiliate. Yet often our private opinion is strongly at variance with the measure proposed. As Bailey has said, we come at length to substitute habit for reason. We are indeed a long way from the open mind and only when we come to dissect things political from a scientific and therefore common sense standpoint, shall we vote intelligently. This is "garden talk," for I wish you to "plant" it firmly in your mind.

Garden Foundation

At the recent Liberty Fair in Los Angeles a nursery firm had a very fine display of shrubbery. It began at the visitor's feet and rose higher and higher as it receded until by the time it reached the wall of the building it had been built up to 10 or 12 feet high. I could not but think how grand it would be to see these shrubs all in permanent place in the garden. No trees would be needed, nor should any be planted in a small garden, except strictly for shade or fruit purposes (better if for both purposes). One feature only was lacking in the display—a touch of color. It was all solid green. A few bright flowers would relieve the somber hue of foliage, but not even a shrub was in bloom. In the garden an occasional clump of flowers should dot the foreground.

Results from Roses

It was on the 25th of September that I cut back several score of old rose bushes that had enjoyed a period of dormancy for three months previously. In two weeks the first roses opened and the crop since then has been most satisfying. A smaller bed of unpruned roses of one year's planting did not in any way rival the parent bed. Summer rest and autumn pruning certainly give good results. One may occasionally have an unfavorable season, such as frosts of severity very early in the fall, but if so the fault is not in the procedure or garden practice. Even our orange crops are not a success every year, and if all went well with us, no effort of any kind would be necessary. What a useless existence it would entail upon us!

Dual Purpose Plants

Now that planting season has come let us all put in trees and plants that have both economic and ornamental value. For ten years I have harbored two nearly useless acacia trees. Their whole value lay in providing shade for the children during the hot weather. Two avocado trees would have provided fully as good shade and have attained the same size during the ten years. Even at this late time I shall plant two avocados near these acacias, and when the former have two or three years growth, I shall cut out the acacias. Let us consider all planting in the same spirit. Let us consider that if a plant has no use it has no beauty (for us). Fruit bearing plants are just as beautiful as those that "stand idly by."

It is expected that large acreages in the Butte City district of Glenn County will be set out to prunes.

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Conservation Program

From a harvest less in aggregate production than last year, the United States must export at least 17½ million tons of foodstuffs overseas during the coming season. That is about 12 million tons more than average prewar exports, or nearly two tons apiece for the average American farm where most of this food originates.

Rigid conservation of food and feed stored in granaries, cribs, barns and similar buildings—also products now in the fields — is essential to properly maintain our own population and to meet increased foreign needs. Animal feeds, though in a crude form, must be considered as food, since they are the basis for meat, milk and poultry products.

The vast quantity of food stuffs stored on farms makes opportunities for saving them correspondingly large. Following are common sources of food losses with suggestions for reducing them.

Fire

Remove inflammable rubbish, plow fireguards, use care with matches, lanterns and stoves. Supplement these safety measures with fire fighting equipment kept in a definite place for instant use. In brief, consider a farm as a food munition establishment.

Shelter

Prevent spoilage and deterioration by putting all foodstuffs possible under adequate shelter. Full utilization of storage space and prompt repair of roofs help greatly in preventing food losses. By sheltering foodstuffs on farms conservation is effected at the source.

Rats and Pests

Regard rats and similar pests seriously, as the direct enemy of starving humanity. Exclude them with concrete floors and destroy their breeding places. Rats must not eat holes in our bulwarks of national defense.

Stock Losses

More than a million tons of our food exports must comprise meats, fats, dairy products and poultry products. The quantity of this class of food depends largely on comfortable housing and the care which animals receive. Needless exposure and irregular attention may result in reduced production.

Breeding

The most important, and apparently the hardest lesson that the average live stock man has to learn, is the lesson that good feeding pays and pays big.

It is folly for anyone to take up the handling of any kind of live stock until he realizes that his success will depend upon his ability as a feeder. It makes no difference how well his stock is bred, failure is absolutely certain if he neglects the feeding end of his operations, and the majority of failures in the live stock business can be credited to poor feeding.

Time and time again we have seen beginners enter the live stock game full of enthusiasm and with rosy dreams of the future. They have been impressed with the value of pure bred animals and go forth and buy the best they can afford. They take their purchases home and very often the results are disastrous. If they have bought young stuff it doesn't develop as they expected, or, if they selected bred females, the offspring does not "come on." Usually they figure that the breeder has "handed them a package"—that he sold them animals inferior to the run of his herd, when as a matter of fact, the stock was all right but could not develope under the conditions provided for them.

Only last week we visited a herd of pure bred hogs, of which the owner was very proud. We were informed as to the breeding of his herd, and were naturally expecting to see something good, but at the first glance the story was told. He had the breeding all right, but he hadn't developed his young stuff. When pressed for an opinion we frankly told him that his spring pigs were decidedly undersized. He admitted that perhaps they were, but said that he had been a little short on feed and he figured he could not afford to buy. He figured wrong—he could not afford not to buy. Feed never gets too high that the breeder of pure bred live stock can not afford to pay the price. Well grown and developed live stock is always salable and the buying public is ready to pay the price. There is plenty of the stunted kind, but not enough of the well developed sorts, and no matter how well an animal may be bred, the buyer does not want that kind.

Lumber on California Farms

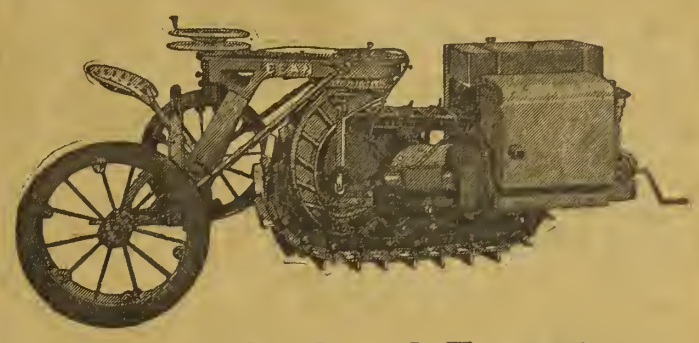
The agricultural experiment station of the University of California has issued Bulletin No. 299 "The Use of Lumber on California Farms" by Merritt B. Pratt. It touches upon the adaptability of use, cost, availability, structure properties, key for identification, etc. The bulletin may be had by addressing Agricultural Experiment Station, Care University of California, Berkeley.

Regarding the bigtrees or Sequoia. "The wood of the bigtree is lighter and more brittle than that of the Coast redwood, to which it is inferior in practically all respects except durability. Bigtree is cut into lumber to some extent, but its chief value is for posts, shakes and stakes for vineyards in the San Joaquin Valley. From one tree 14 feet in diameter, there were cut 12,000 2x2x7 grape stakes, 6500 4x5x7 posts, and 15,000 shakes, 2 feet long and 6 inches wide, the total value of the product being nearly one thousand dollars. The use of this wood is local, and it is mentioned only to distinguish it from the Coast redwood, with which it is often confused."

France is confronted by an industrial crisis. There are more than a million employes in war industries and the country is without raw materials to begin other manufactures. The older classes in the army are expected to return to civilian life as soon as possible, leaving only the younger classes for purposes of occupation.

The total of American casualties is announced as 236,117. After eliminating slightly injured who did not need hospital care, it is believed the total of killed, died of wounds or disease, or on the unclassified death list, the seriously wounded and the prisoners and missing, will work out not in excess of 125,000.

Glenn County has harvested over 21,000 acres of wheat.



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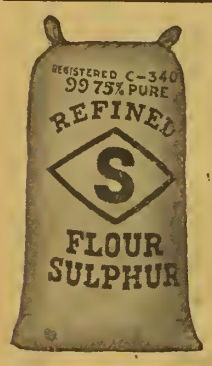

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Bulk Handling of Grain in California

Bulk handling of grain is growing in favor in California. The actual demonstration of the value of handling grain in bulk, as contrasted with the wasteful, expensive, and antiquated method of handling in sacks, has been made in numerous places throughout the grain growing districts of California in the last year. From the northern reaches of the Sacramento Valley on both the eastern and western sides of the river, south of the Tehachapi range, a progressive farmer here and there last year began storing his grain in metal grain storage bins. Here and there an occasional big operator built special warehouses equipped with grain bins, or erected expensive reinforced concrete elevators.

The saving in labor, time, and the cost of jute bags which went to the prohibitive price of 32 cents last year, together with the great saving in grain was the actuating cause fostering this change from the old time method of handling California wheat and barley in sacks.

It is estimated by experts that 25 per cent of the wheat and barley raised in California is lost to the world's food markets by reason of handling and storing in sacks. These losses are traceable to a number of sources. As everyone knows, the grain sacks leak and a great amount of grain is lost by the wheat and barley working through the fabric of the grain bags. A little cut or tear and nearly the whole sack spills away in transferring it from pile to warehouse or from warehouse to railway car. Rats, mice and other vermin have easy picking when grain is stored in sacks. This food supply for the rodents adds to the growing plague that destroys so much valuable food material annually.

Fire and weather damage of grain stored in bags is excessive, and forms a large part of the annual grain loss charged against the sacking method. Theft of grain stored in sacks is an easy matter, when following the time honored careless California practice, the sacks remain for days and weeks scattered on the fields, as the harvester left them, or in straw covered piles by the roadside.

All these losses of money, labor costs, and wasted grain are eliminated through the storage and handling of grain in bulk, using small fire proof, rat proof, thief proof, and weather proof metal grain bins for storing the wheat or barley as it comes from the thresher. Shipping it in bulk as they do through the Middle and Eastern states and the Pacific Northwest is the secret for reducing excessive labor costs in handling. The change is coming in California, this year probably recording a marked increase in the number of grain growers who will have done away with the grain sack forever.

Future of Long Staple Cotton

Contiued from Page 629

show that we have been using a greatly increased quantity each succeeding year. The principal demand for this has come from the manufacturers of automobile tires. A considerable amount has also been used for expensive knit goods and laces.

The general situation is this: We have restricted the imports from Egypt; the ravages of the boll weevil in the Sea Island fields have cut the yields there; the government has used some Long Staple cotton for air plane and balloon fabric and for gas mask cloth.

To offset these demands and reductions of the supply we have a greatly reduced demand from the principal source of use, the automobile tire fabric mills, since most of these have been diverted to other uses for government needs; the demands for the more expensive laces and knit goods is less; a greatly increased crop of American-Egyptian cotton; a carry-over of a considerable portion of last year's crop and the use of lower grades of cotton by the mills in order to meet the rising prices of raw material. In other words, many are trying to meet competition by using an inferior grade of cotton, rather than raising the price of goods to the consumer. As an example, two mills alone are said to have curtailed the use of cotton with a staple of 1¼ or longer 30,000 bales and increased the use of cotton of shorter staples an equal amount. In this connection, it should not be lost sight of that the production of cotton not classed as Long Staple, but running 1⅛ to 1¼ was 1,213,000 bales last year and 267,000 bales more than in 1916. Of the staples running over 1¼ inch but not included in the American-Egyptian or Sea Island, the production last year was 141,000 bales, more than double the production of the previous year. These are the staples that are being substituted for the American-Egyptian cotton to a large extent. These are the staples that sell at 38 to 47 cents in markets where Sea Island sells for 72. These are the staples most in demand at the present time and undoubtedly will continue in greatest demand until mills manufacturing tire fabric are back to their normal work on a 100 per cent basis.

With the cessation of hostilities new factors are presented. The mills which have been manufacturing automobile tire fabric will naturally be released from government contracts and will as soon as possible get back to 100 per cent normal work. Just how soon this will be is problematical. First, the government has not so far as we know intimated when this change will take place. Possibly the needs of the army may require for some time to come army cloth, duck and other cotton goods. When the mills are again at liberty to take up their normal work, they will still be handicapped by lack of skilled labor which has been diverted to government needs, so that we cannot expect normal production of the mills using Long Staple cotton, until a large part of the overseas force has returned, and that may be six months or two years according to different authorities.

With this uncertainty as to when the cotton will be used, there is at least a partial explanation of the reason why buyers hesitate. To buy cotton the bulk, or at least a considerable part of which may, and probably will not be used until the 1919 crop is grown, is taking some chances. The buyer naturally believes in playing safe. Financiers frankly advise growers to hold their cotton whenever it is possible or to sell just enough at current prices to enable the balance to be carried.

So far we have considered the sit-

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uation from this side of the Atlantic alone. We have forgotten that it was not so long ago that the price of cotton depended not so much upon the crop in America as upon the markets of Europe. In other words the price of cotton was fixed in Liverpool and not New York or Boston—or Phoenix. What will happen when the spindles in all Europe begin again to whir as they will when those who have been making war and munitions of war turn again to producing the essentials demanded by peaceful people? Mr. Brand has estimated that the demands of Europe will call for at least 2,000,000 bales more this year than last year. Just what proportion of this will be Long Staple and how great the demand for the extra staples will be as compared with the short staples probably no one knows.

The production of Egyptian cotton in Egypt for the past ten years or more has been something over 1,000,000 bales annually with the exception of one or possibly two years. Figures showing the exact number of bales available of this year's and previous years' crops have not so far as I have been able to learn been made public. Owing to lack of shipping facilities it is presumed that there may be a considerable amount of cotton, possibly 2,000,000 bales, maybe more and perhaps less, that will be no inconsiderable factor in determining the price of Long Staple cotton. As previously mentioned, the imports of this cotton into the United States were restricted to 120,000 bales for the season of 1918. Will the government place further restrictions upon imports of Egyptian cotton partly as a protection to American growers of this staple and partly because for many months shipping is going to be badly needed? That is one of the unanswered questions that make the future price of cotton uncertain. There is a possibility and this amounts to a belief among some of those in close touch with Eastern markets, that English mills will need every pound of cotton that Egypt has and this brings us back to the question just suggested, "Will Liverpool again control the world's cotton prices?"

After all the controlling factor of the price of any raw product is the demand of the consumer for the manufactured product, and the chief factor of the consumer's demand is first necessity and then price. The Long Staple cottons, whether the Egyptian, American Egyptian or Sea Island, have been used in the more expensive fabrics, knit goods, laces, mercerized goods and automobile fabrics. To a comparatively few these products are necessities; to the great majority of people they are luxuries. In these times of high prices the tendency has been to substitute, to a far greater degree than formerly, something not "just as good" but something cheaper. Many who could afford the luxuries of life have found it necessary to substitute cheaper things to a very considerable extent. Manufacturers have had to cater to the demands of the consumer and substitute shorter staples, even though inferior, in order to produce goods that would sell.

There is no questioning the fact that Long Staple cotton is greatly superior for many things. There is so far as we can learn no dispute about the extra length, quality of fibre and general superiority of the American-Egyptian over the imported Egyptian. For the first time we may likely see the production of Sea Island equal to the American-Egyptian, and may expect in the near future that instead of the price of American-Egyptian being governed by Sea Island the reverse will be true, but that condition does not yet obtain.

These are the conditions that altogether, and not singly or separately, affect the price of cotton today and that must be reckoned with in predicting prices that will obtain in the future. There are those who believe, and they are well informed, that American-Egyptian cotton will be worth on the Phoenix markets 70 cents within a few months. There are others that are not so confident, though no one predicts after-the-war prices.

What is to be the future of the Long Staple cotton industry in Arizona?

That all depends upon the answer to one other question, What is a fair price for American-Egyptian cotton? There may be as many answers to that query as there are growers of cotton, for the cost of production varies with the soil, the methods used and the individual. The cost of labor, teams and machinery has advanced to a very large extent in the past few years and we cannot expect that there will be any material reduction for some time to come. The average production has been for the past few years, in fact pretty nearly ever since it has been grown in the Salt River Valley, a little less than one-half bale this year's crop will average about the same. The cost of preparing the land properly, planting, cultivating, irrigating and the rent or interest on the investment, is just about the same whether one produces one-fourth of a bale or one bale, and it is at best (or at the least) expensive. It is my guess, without knowing positively, that the man that produces an average crop and sells it for 60 cents a pound, just about breaks even. The man that produces less than the averages loses, and the profit is made by the one that can and does produce from a half bale to a bale to the acre. The grower that has the right kind of soil in the right condition and handles it in the right way and produces from three-fourths of a bale to a bale to the acre will make money, big money, with cotton at 50 cents, while the quarter bale production would be at a loss at 75 cents and possibly a dollar a pound.

In the South cotton has been a tenant crop, and the soil of the Southland and the tenants grew poor together. Long Staple cotton is a crop that will never be a success with tenant farmers. This is said advisedly and with due regard to the fact that there are many tenant farmers who are better farmers than some farm owners, but taking into consideration the great majority of tenants that change their location with each new season.

Maximum production is the goal sought for in the production of any crop. This can only be had by the rotation of crops. When growers generally are planting from one-fifth to one-seventh of their average to cotton and the balance to alfalfa, corn and grain and feeding all the live stock the farm will carry, we will be producing more lint cotton than now, and at a cost that will make it profitable at a lower price than is likely to be offered for many years to come.

NATURE AS SHE IS OBSERVED

A nature study and biology teacher somewhere in America sends to The Nature Study Review (Ithaca, New York) the following casket of jewels culled from her pupils regarding their observations and conclusions in the domain of nature:

"Organic matter is when you have something the matter with your organs."

"Five devices by which seeds are scattered are wind, water, explosion, torn up, taken out, and thrown away."

"The peculiars of an insect are some of them bring diseases, others destroy food, suck the blood, spoil the flowers, lay eggs, and kill babies."

"The grasshopper, when he walks, he either jumps or hops."

"The jaws of a grasshopper move east and west."

"A larva is an unfinished animal."

"The flowers is to show what a plant can do."

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Secretary Houston Recommends Control of Packers and Stock Yards

Written for California Cultivator

IN VIEW of the fact that California live stock markets are being studied by all the live stock organizations in the state, with a view of working out a better system. And also in view of the fact that in the recent report submitted by the federal trade commission it is charged:

"That the big packers together control the live stock markets.

"That such competition as appears to exist is limited and not real.

"That they together fix live stock prices."

The following remarks made by Secretary Houston in his annual report should be of interest. That portion of the report touching the meat industry follows:

Under the authority conferred upon the president by the food control act, substantial progress was made by the department of agriculture in the regulation and supervision of stock yards and of commission men, traders, order buyers, packers, and others handling or dealing in live stock in or in connection with stock yards. The important results already accomplished in the improvement of live stock marketing conditions, and in the elimination of many uneconomic and unfair market practices, demonstrate the effectiveness of the form of control which has been exercised under the war power and the desirability of continuing it or a similar form of supervision. Not only the stockmen who patronize these great centers of live stock trade, but also some members of the trade themselves, have recognized the possibilities for betterment of marketing conditions through their regulation by the department, utilizing its corps of supervisors clothed with the requisite authority. Besides the protection thus extended to consignors of live stock for sale at the markets, the opportunity is afforded for improvement in methods, facilities, and trade practices incident to the handling and sale of live stock involving many millions of dollars daily.

Closely associated with the supervision of live stock markets is the problem of a similar authority over the slaughtering, meat packing, and related interests which are centered at the principal live stock markets. Under the regulations applied to meat packing establishments by the food administration, limitations have been placed on profits on meats and by-products handled by these establishments, the installation of uniform accounting systems has progressed with comparative rapidity, and the centralization of control by a small group of packers has been materially checked. The economic welfare of meat production and distribution would be promoted by the continuation and development in some form of the supervision over the packing industry. Such control should be closely coordinated with that over the live stock markets. There is need, in connection with this supervisory system, of a central office to which packing concerns should be required to report currently in such form and detail that it would be constantly informed concerning their operations. Such an arrangement would afford protection to producers and consumers.

The restoration and maintenance of conditions which will justify confidence in the live stock markets and meat packing industry is the greatest single need in the present meat situation in the United States. It seems desirable, therefore, that the necessary legislation be enacted at the earliest possible moment. The assurance of open competition and the stabilizing of prices in the live stock markets, the elimination of evil practices, the adjustment of charges for market services, and the restoration of confidence in market conditions generally, apparently require three remedies, namely, regulation, information, and voluntary cooperation. Federal regulation, organized and administered as indicated above, exercised in close harmony with the regulatory bodies of the various states, is the most essential feature. Constant publicity, under government direction, of current market prices, supplies, movements, and other conditions pertaining to the marketing of live stock, meats, and animal by-products, would add immeasurably to the effectiveness of any form of regulation. It would also be a means of stabilizing the marketing of live stock and its products and of making available the information required by producers and distributors for the most intelligent and economical marketing of their products. Progress already has been made in the creation of machinery for such service at market centers in all parts of the United States. Legislative authority for its future development in connection with live stock market supervision should be continued and extended. Finally, better organization of live stock producers and closer cooperation between their organizations and those representing the different classes of intermediaries, all working in harmony with agencies of the government directly concerned, will also increase the effectiveness of regulation and publicity, make for the maximum of efficiency, and conduce to the welfare of the packers and distributors as well as of the producers and consumers.

Dairying Improved by Bull Associations

DAIRYMEN who would like to use pure bred bulls to improve their herds, but who cannot afford to purchase such animals should investigate the advantages of a cooperative bull association. These organizations are formed by farmers for the joint ownership, use and exchange of pure bred bulls. The purchase price and cost of maintenance are distributed according to the number of cows owned by each member, thereby giving the dairyman an opportunity to build up his herd at a minimum expense. The organization also helps its members to market dairy stock and dairy products, to fight contagious diseases of cattle intelligently, and in other ways to assist in improving the dairy industry. Farmers' Bulletin 993, recently issued by the United States department of agriculture, gives directions for the organization and operation of bull associations together with constitution and by-laws necessary for such an organization.

The typical cooperative bull association as recommended by the dairy specialists of the department, is composed of from 15 to 30 farmers who jointly own five bulls. The territory in which these farmers live is divided into five "breeding blocks," one bull being assigned to each block. As many as 50 or 60 cows may belong to the farmers in each block, and the bull in the block should be kept on a conveniently located farm. To prevent inbreeding each bull is moved to the next block every two years. If all the bulls live, and if all are kept until each has made one complete circuit, no new bulls need to be purchased for ten years. In this way each member of the association has the use of good pure bred bulls for many years, at a cost of only a small part of the purchase price of one good bull —usually less than is invested in a more inferior bull owned by individual dairymen.

In a survey conducted by the United States department of agriculture on 1219 farms in eight districts in Iowa, Minnesota, and Massachussetts in which there were no associations, it was found that there were 817 bulls, having an average value of $76. Had the owners of these cheap bulls been properly organized the same investment would have purchased the necessary bulls of an average value of $283. In one association having more than 100 members the original cost of good pure bred bulls to each member was only $23. When questioned regarding the value of cooperative bull associations, 150 farmers in Maryland, Michigan, and Minnesota estimated that the use of bulls belonging to the organization increased the value of the offspring in the first generation from 30 to 80 per cent, with an average of 65 per cent.

The selection of the bulls for an association is one of the most important considerations. A good pure bred bull will make rapid and marked improvement in the berds, and the association interest increases in proportion to the improvement obtained. If a poor dairy bull is used the milk production of the members' herds is sometimes reduced, the interest is lessened, and these conditions may lead to tbe breaking up of the association. Success in the operation of an association depends a great deal on the care that is used in its organization. Dairymen contemplating forming an association should consult the local county agent, write to the state agricultural college or to the Dairy Division of the United States Department of Agriculture, Washington, D. C,. for advice and assistance. The farmers' bulletin previously mentioned will be found of great value along this line, particularly the suggestions which are given in connection with the constitution and by-laws.

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More Liberty Fair Live Stock Awards

The Poland Chinas

(Continued from last week)

Poland China Swine

Exhibitors: M. Bassett, Hanford; A. L. Bassett, Hanford; Fred Hartsook, Lankershim; H. I. Marsh, Modesto.

Aged boars—1, I. B. A. Wonder, Hartsook; 2, Orange King, M. Bassett.

Senior boar pig—1, Big Bone Model, M. Bassett; 2, Big Major, Marsh; 3, A. L. Bassett; 4, Major Hadley Wonder 3rd, Hartsook; 5, Major Hadley Wonder 2nd, Marsh.

Junior boar pig—1, Model's Equal, A. L. Bassett; 2, California Model, A. L. Bassett; 3, Big Model Chief, M. Bassett; 4, Model's Equal, A. L. Bassett; Major Improved, Marsh.

Aged sow—1, King Wonder's Giantess, Hartsook; 2, Nelson's Wonder A. 2nd, Hartsook; 3, Model Giantess, Hartsook; 4, Miss Giantess, Hartsook; 5, Hustler's Giantess, M. Bassett.

Senior yearling sow—1, Cali Belle, M. Bassett; 2, Model Daughter, Hartsook; 3, Model Lady, Hartsook; 4, Long Model, A. L. Bassett.

Junior yearling sow—1, Lady Long Fellow, M. Bassett; 2, Wonder's Giantess, Marsh; Model Picture, M. Bassett.

Senior sow pig—1, Big Model Maid, A. L. Bassett; 2, Major's Beauty, Marsh; 3, Model Miss, A. L. Bassett; 4, Model Maid, A. L. Bassett; 5, Long Wonder Lass, Marsh.

Junior sow pig—1, Model Daisy, A. L. Bassett; 2, Smooth Model, M. Bassett; 3, Miss Hulda, M. Bassett; 4, Wonder Prospect Girl, Hartsook; 5, Wonder Prospect Lassie, Hartsook.

Senior champion boar—I. B. A. Wonder, Hartsook; reserve senior champion, Orange King, M. Bassett.

Junior champion boar—Big Bone Model, M. Bassett; reserve junior champion boar, Model's Equal, A. L. Bassett.

Grand champion boar—I. B. A. Wonder, Hartsook; reserve grand champion boar, Big Bone Model, M. Bassett.

Senior champion sow—King Wonder's Giantess, Hartsook; reserve senior champion sow, Lady Longfellow, M. Bassett.

Junior champion sow—Big Model Maid, A. L. Bassett; reserve junior champion sow, Model Daisy, M. Bassett.

Grand champion sow—King Wonder's Giantess, Hartsook; reserve grand champion sow, Big Model Maid, A. L. Bassett.

Aged herd—1, Hartsook; 2, M. Bassett.

Young herd—1, A. L. Bassett; 2, M. Bassett; 3, Marsh; 4, Hartsook.

Herd bred by exhibitor—1, A. L. Bassett; 2, M. Bassett; 3, Marsh; 4, Hartsook.

Get of sire—1, A. L. Bassett; 2, M. Bassett; 3, Marsh.

Produce of dam—1, A. L. Bassett; 2, M. Bassett; 3, Marsh.

The American Poland-China Record Association, W. M. McFadden, secretary, Live Stock Record building, Stock Yards, Chicago, Illinois, offered a silver trophy cup, value $50, for the best four pigs under six months old, from one litter, farrowed the property of the exhibitor. This was awarded A. L. Bassett.

A silver trophy cup, value $50, awarded to the winner of the aged herd went to Fred Hartsook.

The Berkshires

When the Liberty Fair was first projected, the Western Berkshire Congress planned to make a notable showing, and to close the show with a high class consignment sale. Had the fair opened on scheduled time there is little doubt but that the congress plans would have been carried through, but after the many postponements only two herds arrived—a disappointing number, but a surprise in quality. The Grape Wild herd owned by A. B. Humphrey, Escalon, and considered one of the top herds of the breed, came from the North and found ample competition in Rose Crest herd, owned by F. L. Hall, Perris. The character and quality of the Hall herd was a revelation to many and is entitled to be classed as one of the leading herds. C. R. Doty of Charleston, Illinois, one of the best known state fair exhibitors of the Middle West, acted as judge. Straight through the classes the honors were divided quite equitably. The junior yearling boar of Humphrey's, Grape Wild Emblem, was made senior and grand champion over the cracking good junior pig Grape Wild Chief. Hall won senior and grand championship on the beautiful senior yearling, Rose Crest Favorite 2nd, a sow of his own breeding, sired by Ames' Rival 118th. Humphrey won the aged herd, young herd and herd bred by exhibitor. Hall won the get of sire class on the get of Ames' Rival 118th. Humphrey won the produce of dam class.

Berkshire Swine

Exhibitors: A. B. Humphrey, Escalon; F. L. Hall, Perris.

Aged boar—1, Ames' Rival 118th, Hall.

Senior yearling boar—1, G. W. F. Leader, Humphrey.

Junior yearling—1, Grape Wild Emblem, Humphrey.

Senior boar pig—1, Rose Crest Rival Laurel 2nd, Hall; 2, Rose Crest Rival 4th, Hall; 3, Rose Crest Rival 3rd, Hall; 4, Escalon Rival 2nd, Humphrey.

Junior boar pig—1, Grape Wild Chief, Humphrey; 2, Escalon Artful, Humphrey.

Aged sow—1, Wilentha Lady 17th, Hall; 2, Leader's Artful Belle, Humphrey; 3, Grand Lady Fashion, Humphrey; 4, Wilentha Lady, Hall.

Senior yearling sow—1, Rose Crest Favorite, Hall; 2, Rose Crest Favorite 2nd, Hall; 3, Escalon Ladybird, Humphrey.

Junior yearling sow—1, Escalon Lassie, Humphrey; 2, Rose Crest Rookwood Lady 3rd, Hall; Rose Crest Rookwood Lady 2nd, Hall.

Senior sow pig—1, Escalon Blue Belle, Humphrey; 2, Rose Crest Hope 2nd, Hall; 3, Royal Polly, Humphrey; 4, Rose Crest Laurel 2nd, Hall; 5, Rrose Crest Lassie H., Hall.

Junior sow pigs—1, Grape Wild Rose 2nd, Humphrey; 2, Grape Wild Rose 3rd, Humphrey; 3, Escalon Artful Belle 5th, Humphrey.

Senior champion boar—Grape Wild Emblem, Humphrey. Reserve senior champion boar, G. W. F. Leader, Humphrey.

Junior champion boar—Grape Wiid Chief, Humphrey. Reserve junior champion boar—Rose Crest Rival Laurel 2nd, Hall.

Grand champion boar—Grape Wild Emblem, Humphrey; reserve grand champion boar, G. W. F. Leader, Humphrey.

Senior champion sow—Rose Crest Favorite, Hall; reserve senior champion sow, Escalon Lassie, Humphrey.

Junior champion sow—Grape Wild Rose 2nd, Humphrey; reserve junior champion sow, Escalon Blue Belle, Humphrey.

Grand champion sow—Rose Crest Favorite, Hall.

Aged herd—1, Humphrey; 2, Hall.

Young herd—1, Humphrey; 2, Hall.

Herd bred by exhibitor—1, Humphrey; 2, Hall.

Get of sire—1, Hall; 2, Humphrey.

Produce of dam—1, Humphrey; 2, Hall.

Single barrow—1, 2 and 3, Humphrey.

Pen of barrows—1, Humphrey.

The Draft Horses

Ruby & Bowers, Davis, California, staged a greatly appreciated showing of heavy horses. This firm had nearly 40 head of stallions and mares in their stalls. O. H. Brandt of Shellville showed Percherons and Clydesdales and the Dibblee estate, Santa Barbara, made a small but select showing of Clydes.

The horses were rated to the satisfaction of all by Professor F. W. Wilson of the University of Nevada.

Several new horses were brought forward this year. Among the Percherons, Ruby & Bowers showed a slashing good three year old, Halton. This colt has a great deal to recommend him; he has plenty of size, ample bone, a lot of quality and is a flash mover. He was easily the outstanding Percheron and found his way to the extreme top with no trouble.

Among the Belgians, the two full brothers, Stevenot and Brussels, were the attractions, the former being made champion.

In the Clydesdale classes the Dibblee estate brought out the aged stallion, Bonnie Edward. This imported horse furnished quite a surprise. He is quite the best Clydesdale the writer has seen in California, and although he had no competition he could stand a lot.

Toggenburg Goats

Exhibitors: Elmer McInturff, Lamanda Park; F. T. Heintz, Baldwin Park; Mrs. Ida M. Burdick, Lankershim; Mrs. L. O. Rhoades, Pasadena; L. C. Buhl, Upland.

Aged buck—1, Alessandro; Elmer McInturff.

Buck one year old and under two—1, Chieftain, F. T. Heintz.

Buck under one year—1, X. L. Triumph, Mrs. Ida M. Burdick.

Aged doe—1, Princess Louise, F. T. Heintz; 2, Glarna 3rd, F. T. Heintz; 3, El Chivars Margeline, Mrs. L. O. Rhoades.

Doe one year old and under two—1, Sue of Rancho 57th, F. T. Heintz; 2, Melbaline B., L. C. Buhl; 3, Endora, Mrs. L. O. Rhoades.

Doe under one year—1, Undine, F. T. Heintz; 2, Edith, Mrs. L. O. Rhodes; 3, Killarney, F. T. Heintz.

Champion buck—X. L. Triumph, Mrs. Ida M. Burdick.

Champion Doe—Princess Louise, F. T. Heintz.

Saanen Goats

H. F. and L. I. Schinker, Eagle Rock, were the only exhibitors of Saanen goats.

Anglo-Nubian Goats

Exhibitors: Mrs. P. B. Heintb, Baldwin Park; Mrs. E. A. Messerly, Eagle Rock; Miss Emma Kraft, Los Angeles; Minnie L. Barker, Venice.

Aged buck—1, Inkyo Kahnelloh, Mrs. P. B. Heintz.

Buck one year old and under three—1, Sekenyen-Re, Mrs. E .A. Messerly; 2, Inkyo Boskoh, Mrs. E. A. Messeriy; 3, Burnaby Trafford, Mrs. E. A. Messerly.

Aged doe—1, Kola Ku, Mrs. E. A. Messely; 2, Banzai Fetnah, Mrs. E. A. Messerly.

Doe one year and under two—1, Argante Mrs. E. A. Messerly; 2, Fantasma, Miss Emma Kraft; 3, Zola, Mrs. E. A. Messerly.

Doe under one year old—1 Fern, Mrs. P. B. Heintz; 2, Annabel Lee, Mrs. E. A. Messerly; 3, Phyllis, Mrs. P. B. Heintz.

Champion buck—Inkyo Kahnelloh, Mrs. P. B. Heintz.

Champion doe—Fern, Mrs. P. B. Heintz.

Pig Club Swine

Boar or barrow under one year, pure bred—1, Buzz, Charles N. Glahu, Owensmouth; 2, Crestsire, Wassen Chase, Van Nuys; 3, Barney Oldfield, K. and H. Gilbert, Van Nuys; 4, Robert Lynch, Gardena; 5, Success, Jr., Ed Paggi, Van Nuys; 6, Direct Messenger, Jr., Ed Paggi, Van Nuys.

Sow under one year old—1, Beatrice, Edwin Angier, Van Nuys; 2, Beatty, Edwin Angier, Van Nuys; 3, Bessie, Edwin Angier, Van Nuys; 4, Miss Berke, Warren Chase, Van Nuys; 5, Miss Victory, Paul Whitsett, Van Nuys; 6, Princess Pauline, Paul Whitsett, Van Nuys.

Boar or barrow under one year—1, Chappy, Kenneth Wheeler, Lankershim; 2, John Carter, Los Angeles Jefferson High School; 3, King, Kingsley Chadeayne, Van Nuys; 4, Chad, Kingsley Chadeayne, Van Nuys; 5, Sow, Richard Boch, Gardena.

Sow under one year old—1, Suey, Kenneth Wheeler, Lankershim; 2, Pride of Jefferson, John Carter, Los Angeles; 3, Liberty, Donald Spears, Los Angeles; 4, Betsy, George Sharp, Gardena.

The Sheep

Bishop Bros., San Ramon, had the only flock of Shropshires and Calla Grove Farm, Manteca, showed the one flock of Hampshires.

HUMPHREY ADDS GUERNSEYS, AND A NEW BERKSHIRE BOAR

The herds of Berkshires and Guernseys from the Grapewild Farms of A. B. Humphrey, Escalon, came south and made half the exhibit for each of the breeds.

Chas. Maurer in charge of the Grapewild herds stated that they had recently purchased the small, but select, herd of Guernseys maintained by the Calla Grove Farm, Manteca.

Mr. Humphrey has also received a son of the English Berkshire boar, Epocal, from the Gossard Breeding Estate, Martinsville, Indiana. It will be interesting to watch the judicious use of this new blood in this herd, which is counted one of the strongest herds of the breed.

FALL PIGS

Lots of fall pigs develop into peaked, pot-bellied, pitiful looking things.

The hog is an animal that is quite susceptible to cold and unless a dry bed is provided in the winter or rainy season a great deal of food is consumed in keeping the animal warm.

A regular supply of some kind of nourishing feed must be provided for fall pigs if they are to be kept growing throughout the winter—and they must be kept free from lice.—W. S. G.

Calf Enemies

WHITE SCOURS BLACKLEG

Your Veterinarian can stamp them out with Cutter's Anti-Calf Scour Serum and Cutter's Germ Free Blackleg Filtrate and Aggressin, or Cutter's Blackleg Pills.

Ask him about them. If he hasn't our literature, write to us for information on these products.

The Cutter Laboratory
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"The Laboratory That Knows How"

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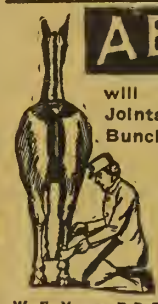

will reduce Inflamed, swollen Joints, Sprains, Bruises, Soft Bunches; Heals Boils, Poll Evil, Quittor, Fistula and Infected sores quickly as it is a positive antiseptic and germicide. Pleasant to use; does not blister or remove the hair, and you can work the horse. $2.50 per bottle delivered.
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Registered Shorthorns
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Berkshires—Both Sexes
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California's Most Popular Big Type Sire
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(By Great Wonder and Model Lady 4th)
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Two High Class Jr. Boars, choice $65.00. Six Fall Boars, choice $50.00.
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Open and bred gilts; also weaned pigs for sale. Fair Prize Winners. Write
W. M. Way Modesto, Route 1, Cal.

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STANISLAUS COUNTY LEADS
All counties of California in number of herds of registered Holsteins and number of 30 pound sires in service.

Segis Pontiac De Kol Dutch
Whose three nearest dams are 1000 pound cows that average over 30 pounds in 7 days, heads my herd. Bull calves for sale. E. E. Freeman, Rt. B. Modesto

HOLMES STOCK FARM
Registered Holsteins of best breeding. Young bulls for sale.
R. L. Holmes Modesto, Cal.

When you buy why not buy the best? We have it in Stanislaus.

Thompson's Registered Holsteins
Young bull calves for sale with yearly record backing.
Luther Thompson, Rt. A, Box 381, Modesto Cal.

Our Senior Herd Sire is KING KORNDYKE HENGERVELD ORMSBY 7th
Five of his sisters sold at public auction for $23,800, an average of $4760.
This blood has made some of the world's greatest producers.
Our junior herd sire is TOYON KING KORNDYKE SOLDENE, son of a 33.23 pound daughter of King Hengerveld Aaggie Fayne.
Young bulls for sale. No females.
REGISTERED BERKSHIRE BOARS, sons of the $1500 boar Star Leader, for sale.
Kounias Registered Stock Farms, Modesto, Cal.

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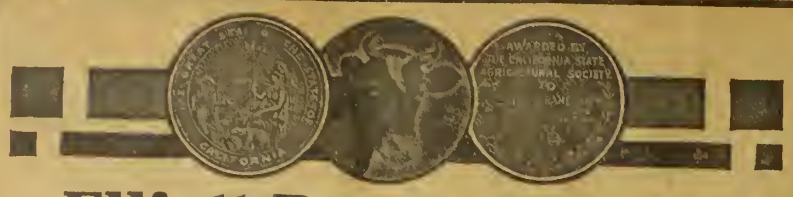
GIVES GREATEST VALUE FOR LEAST MONEY
IT MAKES THEM FAT
Hauser Packing Co. Los Angeles



Elliott-Brant Rancho Guernseys

We have an especially fine bunch of young Guernsey bull calves to choose a future herd sire from. Guernsey bulls cross well with all breeds of cattle and they increase the quality and color of the milk as well as the quantity of milk and butter fat. The Guernsey bull has won the battle with the scrub cow.

We have calves from A. R. cows with different sized records up to 750 pounds of butter fat. Our prices are reasonable and are based on breeding and records. Write and tell us your needs and we will tell you how we can fill them.

Elliott-Brant Rancho - Owensmouth, Cal.

D. O. Brant, Mgr.

California Wonder

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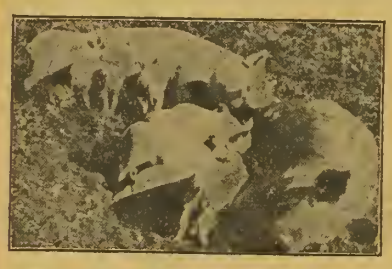
Breeders and dealers in American Jacks and Jennets.

Jacks and Jennets for sale at all times. Come and see them.

John Burrell

R. F. D. B. Box 74

Hanford, Kings County, Cal.



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MONTELENA HERD

Large Yorkshires

Have large litters. Service boars of exceptional quality, in best breeding condition. They are strong, active, long, deep fellows, with big bone and splendid heart girth. Come and see them, or write to

A. L. TUBBS CO.

Calistoga - California

Poland Chinas, Medium Type

Choice breeding stock, both sexes from Panama-Pacific International Exposition prize winning strain; 12 firsts, Junior Champion and Reserve Grand Champion Boar. Junior and Senior and Grand Champion Sows, $2145 cash awards. Write to

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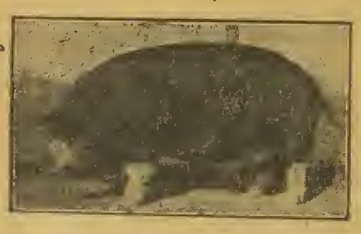

Grand Champion Sow

Sacramento State Fair

Berkshires

Forty-three of our litters this year averaged ten to the litter. We sell foundation sows and boars to head your herd from our easy keeping, heavy producing strains. Write to

JAMES MILLS ORCHARDS, Hamilton City, California

Economy Stock Powder

fed regularly to sheep will keep them free from worms. It also acts as a tonic, a laxative, a blood purifier and as an aid to digestion cannot be improved upon. Will eliminate BLOAT and ALL AILMENTS COMMON TO SHEEP.

SEND FOR A FREE SAMPLE.

Economy Hog and Cattle Powder Company

Hearst Bldg. San Francisco, Cal.

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

January Price for Hogs

A meeting in Chicago was participated in by representatives of the United States food administration, the committee of packers sharing in foreign allotment orders, representatives of the agricultural advisory committee and special representatives for the swine producers.

It was decided that the price of hogs for January shall be continued on the same basis as in November and December—17½ cents per pound. Throwouts are to include pigs under 150 pounds, stags, boars, thin sows and skips.

Because of the shortage of labor at the slaughtering centers, occasioned by the influenza epidemic and by the large number of men withdrawn for military service, the slaughterers have found difficulty in handling the large supplies of live stock which have been coming to market during the past few weeks.

The recent very heavy runs at the principal markets indicate that there may be in the country a larger number of hogs than the heretofore published estimates show. It is hoped that the runs of hogs to the markets and shipments on foreign orders will be of such reciprocal volume that the packing centers can now handle them without the embargo.

Last week we published a statement to the effect that Coast prices would, for the months of December and January, rule one cent under the Chicago minimum, thus California producers may expect to receive at least 16½ cents per pound next month, but in all probability the actual price paid will perhaps rule higher.

Mohair Men Meet at Phoenix

Written for California Cultivator By M. E. Bemis

Mohair growers met in Phoenix, Arizona, December 7 to 9 for their annual gathering. Mohair, this past season, has brought 85 to 90 cents a pound. But for the work of the association it is probable that it would not have brought over 60 cents. The use of mohair in army cloth has been of material benefit to goat men.

The convention was addressed by M. E. Musgrave, W. R. Chapline, Jr., of the national forest reserve, and R. H. Williams of the animal husbandry department of the state agricultural college. Delegates from Missouri, Texas, Oregon, Arizona and New Mexico attended the three day session. The association has succeeded in getting the United States bureau of markets to take up the matter of grading. A new use for mohair was reported, that of press cloth for cotton seed oil mills.

National forest investigations indicate that there is a considerable area of land that may be made available for goat grazing, thus encouraging the increase of goats on the ranges.

The officers of the association are: U. S. Grant, Dallas, Oregon, president; John Mahnke, Kelseyville, California, first vice president; H. A. Morgan, Wilcox, Arizona, second vice president; M. L. Conklin, Newville, California, third vice president; T. L. Morris, Hillside, Arizona, fourth vice president; F. O. Landrum, Laguna, Texas, secretary-treasurer. The next session is to be held in El Paso in the fall of 1919.

During the session the Red Cross Angora goat Marco, Mohair Men's American Red Cross offering, was sold for the benefit of the Red Cross. This goat was donated by an Oregon breeder and is going over the country and being sold for the benefit of the Red Cross and then is sent on. The sale at Phoenix realized over $100.

The national convention was preceded by the meeting of the state association of Angora goat breeders. This was the second annual session of this association. T. L. Morris of Hillside is president and Aubrey Gist of Skull Valley, secretary. This association has now a membership of about 25. The industry is one of growing importance as the number of Angoras in Arizona has increased from 80,765 in 1910 to 142,561 at the present time.

The state association went on record as favoring the selling of goat meat, instead of masquerading as mutton. During the session three Angoras donated by J. B. Weathersby of Klondyke were sold at auction for the benefit of the Red Cross. The animals brought $255.

The delegates to the national and state associations were given a banquet by the Phoenix chamber of commerce, at the close of the sessions.

Cattlemen in Zone Five Meet

Cattlemen from the counties of Los Angeles, Santa Barbara, Ventura, Inyo, Imperial, Orange, Riverside, San Bernardino and San Diego, constituting zone five under the organization plans of the California Cattlemen's Association, met Saturday, December 7, at the Liberty Fair and effected a permanent zone organization and elected officers.

The officers of zone five are: O. B. Fuller, Los Angeles, president; Fred H. Bixby, Long Beach, vice president; Walter Greening, Los Angeles, secretary. In addition to the above officers, the following men were elected directors—who with the president and vice president, serve as state directors — Harry Jones, Imperial; James Sloan, Lompoc; Frank Butler, Bishop.

Attorney Leighton of the cattle inspection board told the cattlemen of the progress made in administering the new hide and brand law. To date a number of convictions have been secured and several alleged cattle rustlers are awaiting trial. Mr. Leighton stated that the board intended to ask the next legislature to make a reward provision. To date 14,000 brands have been registered and a total of 20,000 is expected. The brand book is now in the hands of the printer and when published, copies can be secured by writing to the Cattle Inspection Board, California Building, Los Angeles.

C. R. Thomas spoke briefly of the trials and tribulations of the Liberty Fair, but illustrated what live stock shows could be made to mean to a community, using the American Royal as a case in point.

Following Mr. Thomas' talk the meeting passed the following resolution:

"Whereas, the Liberty Fair at Los Angeles has brought to our notice the fact that a fair of this kind is of untold benefit to the stockmen, and

"Whereas, a repetition, or another fair, held a year hence would bring added benefits, and

"Whereas, the stockmen represent-

ed at this, the first meeting of zone five of the California Cattlemen's Association, representing the counties of Los Angeles, Santa Barbara, Ventura, Orange, Riverside, San Bernardino, San Diego, Inyo and Imperial, appreciated the numerous advantages accruing to them as a result of such fairs and exhibitions;

"Be it resolved, that we, zone five of the California Cattlemen's Association, heartily indorse the efforts of the directors, managers and superintendents of the Liberty Fair now being held, and suggest that it is our desire that a second fair be held a year hence, and

"Further, we as an association pledge our good will and agree to aid in any way possible a repetition of this Liberty Fair, and

"Further, that a copy of this resolution be sent to the directors of the Liberty Fair, the Chamber of Commerce and the Merchants' and Manufacturers' Association of Los Angeles."

NEW FOREST GRAZING FEES

Secretary Houston announces that the increases in national forest grazing fees first decided on in 1916, but deferred on account of conditions which confronted stockmen during the past two years, will be put into effect March 1, 1919. At the same time, arrangements have been made to grant five-year grazing permits under certain conditions.

In a recent letter addressed to two national live stock associations, Secretary Houston says:

"In accordance with the conclusion reached by me on February 1, 1917, that the charge for grazing should be based upon the real value of the forage, I have decided that beginning March 1, 1919, the charge for grazing upon the national forests during the year-long period will be from 80 cents to $1.50 a head for cattle, varying with the advantages of the different ranges.

"The rate for sheep and goats on each forest will be 25 per cent of the rate for cattle. The rate for horses will be 25 per cent more than for cattle, and the rate for swine 25 per cent less.

"The proportionate charge for grazing during only a part of each year will be in accordance with the provisions of the national forest regulations."

UNIVERSITY SELLS STALLION TO EASTERN COLLEGE

California horsemen will be interested to know that the University of California has recently sold the Percheron stallion, Fernand, to the University of Illinois.

Fernand is quite easily one of the best Percheron sires ever brought West. He was personally selected in France by James McLaughlin on order of A. King McCumber for the Paicines Ranch stud.

Before his importation, he had earned quite a reputation as a sire of desirable types, and in the Paicines stud he rendered exceptional service. He was purchased by the University of California in the summer of 1916 and remained at the head of that stud until the past season when he was replaced by Aiglonel.

On several occasions Eastern breeders endeavored to buy him and the fact that he was finally selected to head what is generally considered the most select band of Percheron brood mares owned by any agricultural college, suggests the esteem in which he was held.

It is to be regretted that such a valuable sire could not be retained in this state where his services are certainly needed.

GLENN, A LIVE STOCK COUNTY

The possibilities of community breeding and what it will do in the way of increasing wealth and bringing the agricultural advantages to national attention is shown by what has been done in Glenn County.

Ten years ago there were very few registered animals in the county, and prospective buyers of breeding animals would as soon have thought of going to Zanzibar as to Glenn County to supply their needs.

Now, when a prospective buyer is in the market for one or a carload of registered hogs of three of the leading breeds, Glenn County is one of the first places that comes to his attention.

Recently H. P. Slocum & Son have supplied a large number of Durocs to the state colony at Durham; Berkshires have been sent to South America and a big shipment will probably soon be made to the Orient.—W. S. G.

SMALL FLOCKS PROFITABLE

There is more interest this fall than ever in small flocks of sheep, not only for small acreages under irrigation, but for large grain farms as well.

Every one who has bought a few ewes during the last two or three years is delighted with the results. Of course wool and lambs have been high, but the sheep would have been profitable at much lower prices. And they "fit in" the arrangements of most well regulated farms in such a way that once established they have a permanent place.—W. S. G.

COTTONSEED HULLS AVAILABLE

The live stock commission of federal food administration announces that cattle feeders will find a large quantity of cottonseed hulls available, at Imperial Valley mills at a price of $20 f. o .b. El Centro.

Cottonseed hulls have a feeding value about equal to straw or low grade hay.

NOTE: Skimmed milk is a dairy by-product. Vast quantities of it are either fed to live stock or wasted. The opening of a new market for skimmed milk is of real importance to the entire Dairy Industry. The facts set forth below deserve the thoughtful consideration of all farm people, and of all Agricultural Extension Workers.

HEBE

—and the Dairy Industry

Every phase of business and social life shows new conditions as a result of the war. Greater even than the call for men and munitions has been and is the call for food. America is the pantry and kitchen of the world today.

America has met the demands upon her, and one of the reasons is that within recent years through inventive minds of science alternative foods have been created out of an unchanged or diminished supply of raw products. One of these is ***Hebe.***

Hebe is a compound of evaporated skimmed milk and vegetable fat. *It is properly labeled and marketed for just what it is.* Hebe plays an important part in the economic food problems of the day. Hebe utilizes vegetable fat of very high food value. By using this highly refined vegetable fat a market is made for skimmed milk.

Of the 84 billion pounds of milk produced in 1917, less than 3% was condensed, and 41% was used for butter making. From the 41% made into butter there was left, as a by-product, 30 billion pounds of skimmed milk which the U. S. Dept. of Agriculture states was either fed to live stock or wasted. Hebe reclaims a portion of this skimmed milk and converts it into a nutritious food product.

Hebe, therefore, is a product, the manufacture of which creates a new and more important market for skimmed milk. The manufacture of Hebe is not an endeavor to gain large profits by replacing butter fat with a vegetable fat, for Hebe is a licensed product, the profits on which are regulated by the government.

Hebe is recommended principally for cooking and for coffee. Its use for these purposes widens the market for milk. The manufacture of Hebe provides a steady demand for milk. Dairymen realize the advantage of this when they reflect upon the fact that without regard to fluctuations in the price of milk, its production goes on every day. Hebe rescues for the consumer the valuable food constituents of the separated milk, and adds to them the healthful qualities of cocoanut fat, which the United States Bureau of Chemistry has pronounced high in food value.

Hebe is a distinctive alternative food having a place of its own, and its production, as has been shown in the foregoing, is a direct benefit to the Dairy Industry of America.

A booklet telling the interesting story of Hebe and its value to the Dairy Industry will be sent free on request. Address The Hebe Company, 3208 Consumers Building, Chicago.

THE HEBE COMPANY

CHICAGO SEATTLE

Plenty of Nitrate in Chile

The amount of Nitrate in the Chilean Deposits is

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At present rate of world's consumption, deposits will last for

300 Years

Shipping conditions are improving. American farmers should learn the FACTS. Write for information.

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Chilean Nitrate Committee
P. O. Box 248 Berkeley, Cal.

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It shows the important part piston rings play in producing power, saving gasoline and oil. Tells how you can have a clean, dependable motor. It will enable you to judge for yourself the claims of all types of piston rings. For your own satisfaction, profit and protection—send for your copy today.
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64 years of continuous growth through honest dealing is your guarantee that we pay exactly the high prices that we quote. We grade your furs correctly. When you ship us a No. 1 skin, you get paid for a No. 1 skin, not for a No. 2 or a No. 3. Get all the facts. *Big Illustrated trapping Folder and Price List FREE.* Write for it now.

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You can make $180 a week with fruit and vegetable apparatus. Write at once. NEW WAY DRIER CO., Humboldt Bank Bldg., San Francisco, California.

When Writing Advertisers, Mention The Cultivator.

Live Stock News Notes

The Greatest Shorthorn Sale

The annual sale of Shorthorns, nearly all calves, held by Anoka Farms, Waukesha, Wisconsin, November 30, resulted in an average of $1865 being placed on 48 head.

This is the highest Shorthorn average recorded in America since the famous New York Mills sale in seventies.

The top bull, Anoka Omega, a son of Lavender Sultan, fetched the top price, $12,000, and goes to head the F. C. Merry herd in Missouri. Anoka Omega was later made junior champion at the International. The highest priced female was Clipper Anoka 9th, a senior calf, that sold to A. J. Ryden of Illinois for $5500.

Hopland Berkshire Herd to Castleview

J. Francis O'Connor, Santa Rosa, owner of the Castleview herd of Berkshires, has recently purchased the entire herd of Berkshires maintained by A. W. Foster on his Hopland Ranch.

The Hopland herd, which was founded about the time of the P. P. I. E. has, since its begining, been regarded as one of the choice collections of the breed owned on the Coast.

Mr. O'Connor, it will be recalled, purchased the famous Brush herd of Berkshires and was highly successful in distributing them among the ranchers of Sonoma County, in a way that will be of great benefit to the breed.

Included in the Hopland purchase were a very high class lot of sows, and the herd boar, Iowana Rival Majestic.

Stalder Bros. Strengthen Show

Stalder Bros. of Riverside, who have one of the good herds of Holsteins in Southern California helped very materially to pull the Holstein show out of what looked to be, before the opening, a very bad situation.

For some reason the Holstein interests of the South did not see their way clear to make entries to anywhere near the extent the show deserved.

But Stalder Bros. showed up with a highly creditable string and made from one to three entries in nearly every class, thus adding strength and balance to the show. Most of the Stalder young things were sired by King Pontiac Netherland Segis 3rd.

Carlot Hogs Sold Well at Los Angeles

It had been planned to make the carlot show of hogs one of the strongest features of the Liberty Fair, and had the fair opened on scheduled time, an exceptional lot of hogs would have been in the pens. A large number of producers had "prepped" a carload for this particular show and had them ready early in October. When the postponement was announced most of the feeders did not feel justified in carrying their hogs along in the face of an uncertain opening and consequently most of the lots that would have shown found their way to the butcher.

Donald H. Graham was one breeder who held his hogs and made the show. Mr. Graham's carload consisted of February and March Durocs and, after winning first, was sold to Wilson & Company for 20½ cents per pound —said to be the Coast record. The carlot averaged 252 pounds.

The Conejo Ranch, Newbury Park, was second with a tidy lot of Hampshires that averaged 235 pounds. This lot sold for 17¾ cents—but in fairness to them it should be stated that there was not as wide difference between the first and second carloads as the price would indicate.

Dibblee Shorthorns Make Initial Show

Shorthorn men were very favorably impressed with the cattle shown by the estate of Thos. B. Dibblee, Santa Barbara. The cattle were selected by Manager John Troup, a Scotchman who knows good cattle and Clydesdale horses. Mr. Troup stated that the young Villager bull, Villager's Clipper, on which he had counted strongly, died a short time ago.

If present and prospective plans for the development of this herd materilize, the San Julian cattle will be factors to reckon with in California shows.

Miller's Shorthorns Now at Hollister

Thos. T. Miller, who has recently moved his Shorthorn breeding plant from near Los Angeles, to Hollister, was on hand when the Shorthorns were judged.

Mr. Miller stated that he is building a large cattle barn and that before long, he hopes to have one of the most modern breeding farms in the West.

His new ranch is located on part of the famous Pacheco Ranch, owned by the Pacheco Cattle Company whose headquarters are at Hollister.

Mr. Miller moved most of his Shorthorns to their new home early in November and his show herd was shipped immediately after the Liberty Fair.

Thompson's Pilot Defender

C. T. Thompson of Bishop, who made an attractive show of Durocs at the Liberty Fair, uncovered a surprise when he drove out his good aged boar, Thompson's Pilot Defender. This boar, a grand son of the noted Defender that was responsible for much of McKee Bros. success, was finally made grand champion.

Dr. Creamer Made a Killing

One of the most enthusiastic Duroc breeders of the South is Dr. Michael Creamer of Los Angeles, whose herd is maintained on his ranch at Ireland.

Dr. Creamer hasn't been in the business as long as some but he can show a good many of the older breeders a thing or two about feeding and breeding pigs. His young things shown at the Liberty Fair attracted a great deal of favorable comment because of their splendid size and "class." Not many men have the satisfaction of winning the reserve junior boar championship, and the junior champion and reserve grand champion on sows; first on young herd; first on herd bred by exhibitor; first on produce of sow; first on barrow; at their first show.

Conejo Ranch Makes Big Sale

One of the most important deals ever made in Duroc-Jersey swine, in California, was consummated during the Liberty Fair. Walter Gatten superintendent of the swine department of the Diamond Bar Ranch, Spadra, purchased 60 head of brood sows, bred and open gilts and three herd boars, from the Conejo Ranch, Newbury Park.

Mr. Gatten secured the complete herd of show sows, many of which were winners at the state fair and the Liberty Fair.

The boars selected include California's Great Wonder, grand champion at Sacramento; Latest Model, a senior pig; and Critic For Fair, a junior pig.

Mr. Gatten states that his firm is planing one of the top Duroc herds of the West and that before long they will have one of the largest herds.

California Ranks High in Testing Work

The dairy division, United States department of agriculture, has recently issued a directory of cow testing associations.

The report discloses the fact that there are at present 353 associations, representing 9778 herds containing 168,348 cows. The average number of cows per herd is 27.6 and the average number per association is 476.9.

California ranks sixth with 16 associations; second in number of herds in associations, having 653; second in number of cows, 19,814; first in number of cows per herd, 40.8; first in number of cows per association, 1238.3.

Two California county associations, Imperial and Ferndale, have 3000 and 2500 cows respectively. Only the Corcoran and Alameda associations have less than 1000 cows.

The January, 1918, estimate placed the number of milk cows at 23,284,000 and only .77 of one per cent are in cow testing associations. Assuming that there are approximately 550,000 milk cows in California, 3.6 per cent are in associations—a good showing for this state, but not a good showing for a state that does things in 100 per cent fashion.

Denker Strong in Sow Classes

L. A. Denker, Saugus, whose herd of Hampshire swine ranks as one of the leading herds in the West, made one of the most extensive exhibits at the Liberty Fair. The Denker entries annexed both the senior and junior sow championships and the grand championship.

Tilly Alcartra Past the High Mark

A. W. Morris & Sons, Woodland, report that on December 5, with 32 days yet to go, their marvelous cow, Tilly Alcartra, has already broken the world's milk reckord of 31,246 pounds. Up to that time she produced 31,300 pounds milk and is still milking right at 75 pounds a day. Tilly Alcartra is apparently determined to hold her place as the most wonderful cow in the world.

Champion Steer Brings 22 Cents

The Congdon & Battles senior yearling grade Angus steer, Black Yak, champion steer at the recent Liberty Fair, was sold to a Los Angeles department store for 22 cents per pound, which is probably the highest priced beef ever sold in Los Angeles.

2243 Pigs to the Red Cross

Farmers of Winneshiek County, Iowa, organized a Red Cross pig club last May and 2243 members agreed to donate a pig. The hogs have been shipped and it is expected that the sale will realize between $65,000 and $75,000, all of which will be donated to the Red Cross.

Bassett vs. Bassett

The old adage: Like father like son, was made good with a vengeance when A. L. Bassett, son of M. Bassett, veteran Poland China breeder of Hanford, won over his father in many of the classes at the recent Liberty Fair —and no one seemed to enjoy it more than the father.

The Bassetts are real live stock men—modest winners and good los-

ers. Mr. Bassett stated that their trade had been exceptionally good this fall and that they only had a few boars of serviceable age left. This firm has bred about 30 gilts and sows for spring farrow and the majority of them have been spoken for.

Bassett senior made the decisions in carlot classes.

Berkshires to Sell at San Francisco

It is more than likely that the annual Western Berkshire Congress Sale, usually held at the University Farm, Davis, will, this spring, be held at San Francisco during the week of the California International Live Stock Show.

These Congress sales have developed into established institutions, and have been important factors in the progress made along live stock lines in this state.

Each year the sale is preceded by the annual meeting of the Congress.

A Profitable Guernsey Cow

Apple Blossom of Indian Creek 32757, an eight year old Guernsey owned by H. P. Hamilton, Two Rivers, Wisconsin, recently completed a record of 14,107.8 pounds of milk and 702.57 pounds of butter fat, carrying a calf 275 days of her testing period.

This record qualifies her to the title of champion cow in Class AA, and replaces Benton's Lady Chesterbrook of Ingleside 28672, whose record was exceeded by 11.88 pounds of butter fat.

She commenced her test on August 14, 1917, after dropping twin calves on August 13, and it was only nine days after finishing her test that she dropped another bull calf. In thirteen months and nine days, this cow produced three calves worth from $100 to $250 each. Her own value increased several hundred dollars through her successful test and she produced over 700 quarts of milk which sold at ten cents per quart.

Deducting liberally from the total of these earnings for care and maintenance a sum remains equal to the earning capacity of a salaried man of no mean ability. Since September 9, 1914, a little less than four years, this cow has given her owners three heifer calves and three bull calves.

Foreign Live Stock Prices

A report from Amsterdam, Holland, under date of August 17, 1918, states that recent exportation of horses to Germany has caused speculation in them and great increase in the prices. According to current report a sound horse for draught or carriage purposes will command from $500 to $2000, while a pony or lame horse not seriously disabled, can be sold for $200 to $300. The high prices are due mainly to scarcity of horses. The advance in their prices, however, coincides with the increase in prices of all commodities which is from 100 to 500 per cent and even more in some cases in comparison with pre-war prices. Cattle are also very high priced chiefly for the reason stated above. From $200 to $400 is often paid for a good cow according to current statements on the subject. A similar report from Stockholm, Sweden, under date of August 21 reports the purchase of 250 horses made by the German military commission at 3400 crowns each, equivalent to about $1740.

Yuba County is offering tracts of land in her foothill section for a farm colony for war veterans.

RELEASING FAIR EXHIBITS

It is natural that fair managements should want exhibits of live stock in place on time for the opening, and want them to remain on display as an attraction to visitors until the gates close. But the necessities and convenience of exhibitors must also be considered, for after all the success of the show depends on them.

At the Kansas City Royal Show last month the directors of the Angus, Shorthorn and Hereford associations asked fair associations to limit the time required for exhibitors to be on the grounds from 9 a. m. Monday morning to Friday afternoon.

Of course this was meant to apply particularly to Eastern fair circuits, but it is well for all fairs to take notice.

At some fairs rules are always broken when there is good reason for it. At the Glenn County Fair at Orland for instance, the management makes the comfort and best interests of exhibitors the first consideration. If it is necessary for an exhibitor to get away before the last hour—in order to get to another fair—his premiums are paid and every assistance is given him.

But some boards are more arbitrary, and the new rule should find a place in all fair classifications.—W. S. G.

SOUTHERN DUROC BREEDERS MEET

Members of the Southern California Duroc-Jersey Breeders Association who were exhibiting or visiting the Liberty Fair at Los Angeles, held a special meeting and banquet the evening of December 12.

Matters of interest to the association came up for discussion, chief of which was a plan for holding a bred sow sale during February, 1920. Then breeders guaranteed 60 top gilts and with a year in which to get ready the sale should result in assembling a high class lot of entries, the selling of which should result in adding to the popularity of the Duroc in Southern California.

During the meeting a fund of $250 was handed to President Cramer to be delivered to the directors of the Liberty Fair as added premium money in the Duroc classes.

The following members of the association were in attendance:

Dr. Michael Cramer, Los Angeles, president of the association; R. K. Walker, Bonita, secretary; H. S. White, Chino, vice president; H. H. Brawley, Newbury Park; Donald Graham, Lancaster; W. B. Hewitt, Van Nuys; Walter Gatton, Spadra; Clarence Thomson, Bishop, R. A. Condee, of the George Junior Republic, Chino; and others interested in the development of Durocs in the Southwest.

The association numbers among its membership some of the biggest men in the live stock industry in the South, and much constructive work and development will result from the activities of the organization. Every Duroc breeder in the country south of the Tehachepi should lend his active support to the association.

Yearly records are very much in favor among a very large number of the beginning Holstein breeders in California at present, and that is as it should be. The true worth of a dairy cow is determined solely by her long time production and ability to transmit long time production, and the sooner the fact is realized by Holstein breeders the quicker will the breed take wonderful new strides in its progress.

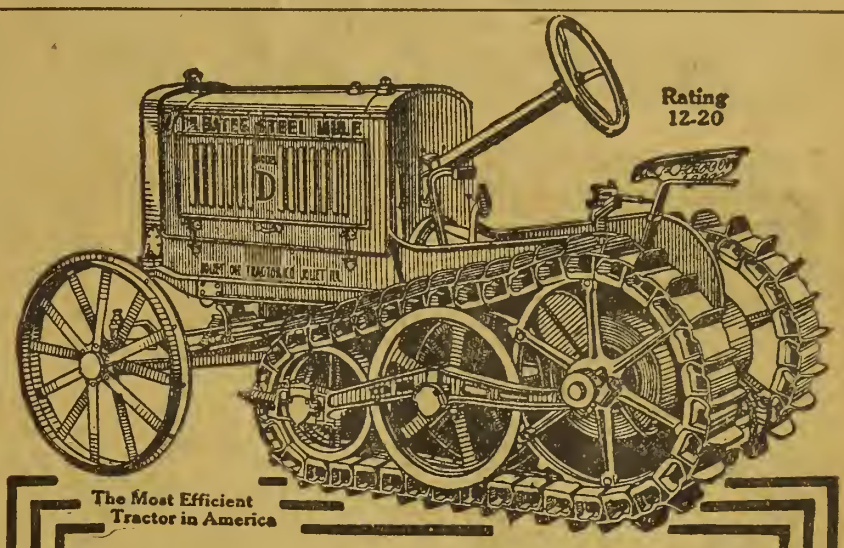
CONDENSARIES TO RECEIVE FULL SUGAR QUOTA

By a recent order of the food administration condensaries may now receive their normal requirements of sugar and new condensaries may be opened. The need of condensed milk abroad for the nourishment of the liberated nations and the Allies is officially reported to be extremely pressing. Shortage of feed and fodder throughout Europe has resulted in serious curtailment in dairy production abroad. Europe is expected to require butter and condensed milk from America in large quantities over a period of years.

Farmers of the United States are asked to prepare for furnishing the great quantities of milk that will be required by condensaries now existing in this country and those to be built.

Because he allowed one band of 1120 ewes, with their lambs, to wander over range which had not been assigned to him, while only a short distance away a second band got onto a nearby cattle range, C. H. Fee, a sheep owner of Ft. Bidwell, Modoc County, was recently asked by the United States forest service to contribute to the public treasury.

Check for $133.33, a considerable portion of which is assessment as exemplary damages, has been received at the United States depository in San Francisco.



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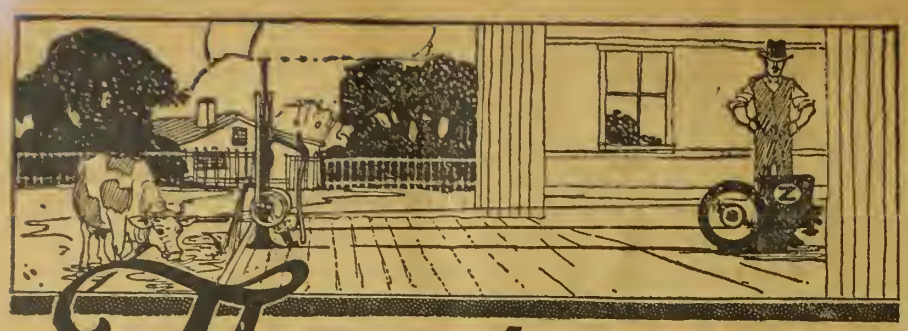

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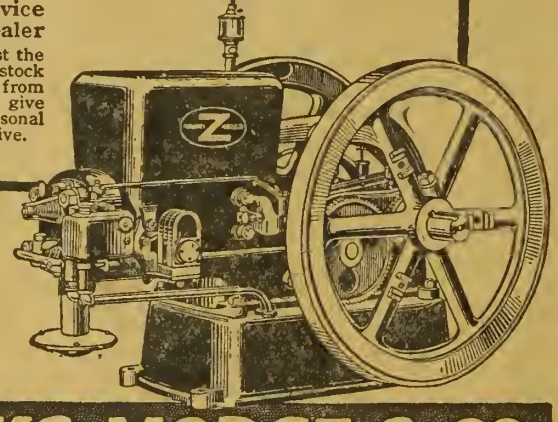

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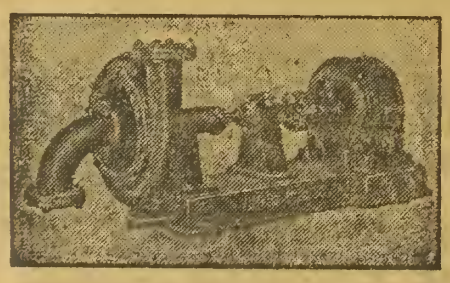

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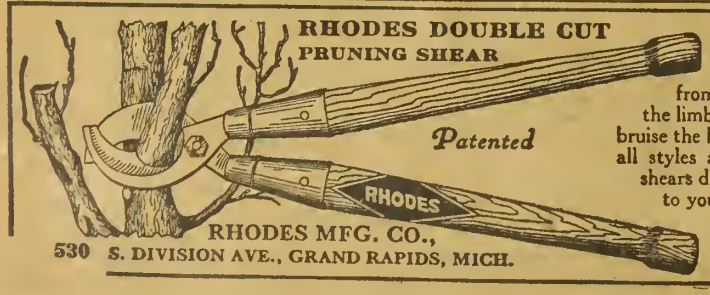

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Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Unsigned communications receive no attention.

Founder

I have a horse that has been lame for some time in the front feet. The hoofs seem to be separated from the center of the foot in places and there is where the soreness seems to be. He is so lame at times that he can not go. He eats well and is in fine shape otherwise. Please give cause and treatment. — Subscriber, Terra Bella.

The trouble is probably founder; inflammation of the soft tissues between the hoof and the bone of the foot. It might have been caused by an acute case of indigestion, taking a drink of cold water when overheated, standing in a cold draft of air when overheated or from any one of several other causes. The remedy is to soak the feet in cold water for half an hour once a day, putting a blister just above the hoofs. This will start a healthy growth of the hoofs and in time will relieve the irritation. Blistering ointment can be made by mixing half an ounce of cantharides, half an ounce of biniodide of mercury and four ounces of lard. Warm the ingredients when mixing but do not get them too hot. Clip off the hair just above the hoofs and brush the parts clean, then rub in the ointment with the ends of fingers for 15 minutes. Tie the horse so he can not reach the feet with his nose or he will rub it and blister his nose also. In 24 hours rub on plenty of lard and let the head down. This will form some scabs in the skin. In about two weeks you can brush the scabs off. Repeat the blister and continue to repeat it until three or four blisters have been applied. The relief in such cases is slow and is only complete when a full new hoof is grown, providing a relapse of the acute condition does not recur in the meantime. Do not overfeed the horse and be careful not to give him cold water when overheated. Letting him run in a lowland pasture where the feed will be moist continually and leaving the shoes off will also help.

Cough

For some time my horse has had a bad cough and of late seems to pant. What can I do for him?—Subscriber, Orange.

Have your druggist make a cough remedy for him as follows. Mix one ounce of the fluid extract of belladonna, one ounce of the fluid extract of digitalis, half an ounce of creosote four ounces of paregoric and enough simple syrup to make one pint. Give half an ounce of the mixture morning and evening. It can best be given by using a black rubber syringe that will just hold the dose and inject it well back in the mouth.

Boar Sick

I have a sick boar. Two months ago his scrotum and testicles swelled to about four times natural size. It has since reduced to its natural size; first one side then the other. The belly has since swollen up to about twice the natural size, his appetite is gone and he looks as though he would die. What can be done for him?—Subscriber, Oceanside.

Boars are sometimes bothered with a limy deposit in the male organs. Wash out the sheath with warm water with a little ivory soap in it. Use an household syringe and inject the soapy water well back into the sheath. Rub the scrotum with a mixture of one part turpentine to four parts olive oil. Put a teaspoon of baking soda in his feed once a day: It will dissolve the lime in the system and it will be carried off with the urine.

Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Value of Hen Manure

Will you please tell me how many pounds of nitrogen, phosphoric acid and potash there are in 100 pounds of hen manure?—Subscriber, Highland.

The content of poultry manure varies rather widely with the feed given, analyses showing amount of nitrogen to the 100 pounds of fresh manure ranging from 0.9 to 1.6 pounds, phosphoric acid from 0.7 to 2.0 pounds, potash from 0.25 to 0.9; in dry manure 2.13 pounds nitrogen, 2.02 phosphoric acid, 0.99 potash.

Home Made Vinegar

Can you tell me how to make vinegar from fruits? Are there any official bulletins or circulars to be had on this subject?—Subscriber, Upland.

The college of agriculture at Berkeley issued two leaflets on the making of vinegar from fruits. The first is "Home Made Vinegar," by F. T. Bioletti and W. V. Cruess; the second, "Candying Fruit, Making Fruit Vinegar and Salting Veletables" by W. V. Cruess. This latter leaflet is illustrated. Both may be secured free of charge by writing College of Agriculture, Berkeley, California. Also in the Cultivator of December 7 on page 584 will be found vinegar making directions by Mr. Cruess.

Lippia

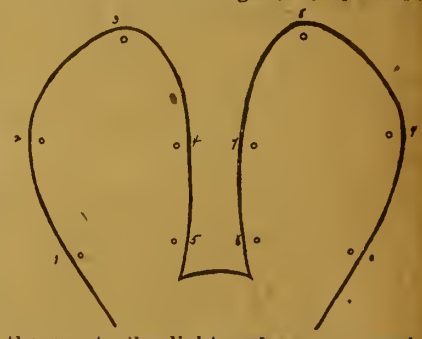
The lawn plant which I enclose seems to be dying out. Is it the nature of this plant to die in winter or what do you think the trouble is?—Subscriber.

The plant sent is Lippia, an evergreen tropical, injured by frost. The frosts this year have not been severe enough to affect Lippia except in very low sections. The plant is so hardy that I can see no other cause for its dying. Do not believe anything is wrong except temperature. It will be all right in the spring.—E. B.

Marking Rabbits Ears

Please tell me the proper way to mark rabbits to distinguish them from each other.—Subscriber, Victorville.

The writer uses this method of marking: Take small punch and cut hole at whatever part of the right or left ear is desired, just inside the vein that runs around edge of ear. Hold



the ear to the light and you can easily see where to press the lever punch. A hole in the lower outside of the right ear is (1); in the tip of same ear, (3); in tip of left year, (8). If you punch all three of these holes the number of that rabbit would be 138. Touch edge of hole with indellible ink and black dot will show if hole does

grow shut. Count holes from right to left and from low to high. Two holes doubles the number; two holes in tip of left year is 88; three holes triples the number, 888. Get small lever punch for this purpose.

Bronchitis

What is the matter with my chickens and what will cure them? They start just like they had a severe cold and gasp for breath like someone very bad with asthma. The first day they continually clear their throats as though they were choked. Some get well and others get no better until they can't eat, then I cut their heads off. I dissected a large rooster. His lungs were affected. There was a large chunk of substance around the lungs that looked like the yolk of egg stirred up, then fried hard. This apparently pressed on the lungs so they could not expand. Some of them wheeze so hard they whistle when they breathe. I gave coal oil. Some it seemed to help; others, not. They roost in an 8 by 10 by 7 chicken house. The cracks are not batted and there is no floor. The roosts are about three feet from the ground. I feed soaked barley, fresh skimed milk and clear water. They have good range and barn room with litter for scratch. —Subscriber, Kelseyville.

Your chickens are having a severe form of bronchitis, probably due to the unbattened cracks of your chicken house. Such a house, especially if it is crowded, is very hard on fowls Bronchitis always comes from exposure or drafts or dampness, and your hens will not get well until they are in warm, dry quarters. Put the sick ones in a comfortable sunny place. Feed bread moistened with milk if they will eat, and add to this food two grains of black antimony twice a day. A drink made of flaxseed steeped in water is often helpful. Sometimes the attack can be checked in its early stages by giving ten drops of turpentine in a teaspoon of castor oil, and repeating the dose after five or six hours.—J. A. K.

Dry Mash

I have six Ancona hens and eleven pullets, all layers, that were moved onto this 40 acre fruit ranch the middle of October and have hardly laid two or three eggs a day ever since. I feed egg mash and some scratch feed. They find so much on range they don't seem hungry. They do not care for mash. Ancona men have told me that this breed doesn't like mashes as well as any other breed. And such has been my experience the few years I have kept them. Is it best to give them any mash? — Subscriber, Freestone.

Why not keep the dry mash before the hens and at least encourage them to eat it? Perhaps it is because they have not been accustomed to dry mash that they do not seem inclined to it. Hens are like children. They hate strange dishes, but there is no reason for not making them eat what is good for them. I should keep them shut up part of the day, with the mash before them. They will learn to eat it if you do not allow them to fill their crops first with other things. Moving to a new home often checks or delays laying.—J. A. K.

Liver Trouble

I have had four Rhode Island Red hens die in the past month. They appear drowsy for a few days then just stand in one spot until they are dead. They are just beginning to lay, are fed corn and run at large. I cut one open and found the liver very large and one of the lungs was a dark red and had small yellow spots all through it. I wonder if there is anything that will help them and what is the cause? —Subscriber, Buena Park.

Corn, while it is a very valuable feed, is not good as an exclusive grain diet for hens. It contains too much fat and is apt to clog the liver. I think your hens are suffering from liver trouble due to this corn diet. Give them a mash with a large proportion of bran in it—say three parts bran by weight, one part ground oats or barley and one part beef scrap or fish meal—and see that they have all the greens they will eat. For the scratch feed give barley sprouted three to five days with your corn. Epsom salts in the drinking water once a week (about one-half tablespoon per hen) or the same amount in a moist mash, will help to relieve their congested livers.—J. A. K.

Grapes on Adobe

Would Thompson's seedless and Muscats grow well on dobe ground? I have been told that they grow too much to vines. Would it be all right to plant grapes on sub-irrigated soil where the water comes up to three and four feet in the rainy season and five to six feet in summer?—Subscriber, Terra Bell ..

This query was referred to F. Flossfeder of the state university, who answers:

"It is possible to grow Thompson Seedless and Muscats on adobe soil. It will be, in a good many cases, somewhat difficult to start the plants on account of the peculiar nature of the soil. In most cases vines planted in this kind of soil will make a vigorous growth and the vines can be pruned longer in order to counterbalance their vigor. I very much question whether it would be advisable to plant grapes on sub-irrigated soil where the water comes to between three and four feet of the surface. In the winter time as well as in the summer the grape vine demands a well drained soil."

Weights of Poultry

What should be the average weight of young roosters, also young pullets of four weeks old from a good strain of Rhode Island Reds, Plymouth Rocks, Brahmas, Orpingtons, White Leghorns? How much at eight weeks and how much at 12? — Subscriber, Woodlake.

I have not figures for all the breeds named, but an experiment at the Storrs experiment station in 1915 with Leghorns and R. I. Reds brought out the following facts: Reds require 6.5 weeks to make the first pound, 3.5 to make the second, and 5.5 to make the third. Leghorns require 7.5 weeks for the first pound, 5.5 for the second, and six for the third. A Red four weeks old should therefore weigh two-thirds of a pound; eight weeks, 1.66 pounds; 12 weeks, 2.34 pounds. Leghorns four weeks old should weigh 0.53 pounds; eight weeks, 1.2 pounds; 12 weeks, 1.86 pounds. In the case of the Reds the figures apply to both sexes. In case of the Leghorns, to pullets only after eight weeks, since pullets and cockerels were segregated at that age. Rocks and Orpingtons will weigh a little more than Reds at the same age; Brahmas about the same, for the Brahma is a slow grower.—J. A. K.

Rice Hulls for Fertilizer

The two rice mills here produce a lot of hulls. Lately a pile, the accumulation of about two years, has been reduced to ashes. Now would this make good fertilizer or top dressing for alfalfa? The haul is short and it can be had for the taking away. Our soil is rather heavy, some of it bordering on the 'dobe of the rice section.—Subscriber, Biggs.

This question was reported to Prof. J. S. Burd of the state university and he answers:

Rice hulls consist almost entirely of silica. The small amounts of potash and phosphoric acid they contain would hardly justify the cost of application.

Continued on Page 647

Run All Farm Machinery With Your Car

Automobile Pumping Water with LAY Porta Power

Make Your Car $600 More Valuable With This Implement

YOU can make your car more profitable than a farm hand—make it pump water, run feed mill, hay hoist, hay press, cement mixer, milker, separator, etc. —by means of LAY Porta Power, an implement instantly connected with the rear tires and delivering 5 to 8 H.P. at the belt.

A stationary engine would cost you $150 to to $300 more, yet LAY Porta Power is far superior because it takes the engine to the job, not the job to the engine. It therefore does much more work during a busy season, and will add several hundred extra dollars to your income.

LAY Porta Power

LAY Porta Power can be quickly taken anywhere that your car can go. You can apply it in less than one minute, and in the same length of time can disconnect it and drive off. No adjusting of car. Hundreds of enthusiastic farmers write and say engine is not overheated, and no tire wear noticeable. Strongly made. Good for a lifetime.

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FARM LANDS FOR SALE

Seven and one-half Acre Prune Orchard for sale. 1 mile from Sonoma City, soil rich, black loam, no adobe, never packs; trees are in A-1 condition; family orchard near house which furnishes fruit from June 1 to Xmas; tank house; new engine; well 300 feet deep; plenty water; barn; beautiful grounds; shade; good 8 room house well built; $2000 crop this season; next to state highway; price $10,000; $6000 cash lowest figure; no exchanges. Box 125, Sonoma City, California. Trays and dipper.

For Sale — One of the Big Producing Ranches of California, income from $20,000 to $25,000 per year. Will sell land, crop, work stock, cows and farming implements for $60,000. Small cash payment to apply on personal property, balance about one-half of the value of crop. Might accept clear Los Angeles residence or income, apartment house or small grove as first payment. Address W. B. Ames, Jonathan Club, Los Angeles, California.

For Sale — 118 acre Ranch in Imperial Valley, near Calipatria, 60 acres leveled and in crop, good house and corrals, fully water stocked, soft sandy soil, 20 acres good alfalfa. Price $10,000, half cash, balance 10-year terms. Must sell account other business. Write OWNER, Drawer "H," Calexico, California.

For Sale—400 acres, improved ranch, 7 miles south of Tulare, ¼ mile from State Highway. Fairly good buildings, excellent pumping plant with shallow lift, 95 acres alfalfa, 100 acres grain land, balance pasture, but can all be plowed, $90 per acre. Beckwith & Anderson, Tulare, California.

For Sale—1360 acre stock ranch, fenced and cross fenced, 80 acres hog fenced. Water in every field entire year. 300 acres tillable soil. Main mountain highway through ranch to General Grant Park. Consider part exchange for San Joaquin alfalfa or vineyard. Address G. W. Wiley, Orange Cove, California.

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Wanted To Sell, trade or exchange 80 acres of alfalfa land in Imperial Valley, for a dairy having 60 to 80 cows, together with lease on place to keep them. Address Frank C. Dias, Holtville, California.

For Sale at a sacrifice, 40 acre ranch in Inyo County, California, near Laws (in potato belt) for only $90 per acre. E. G. Rudolph, Laws, Inyo County California.

SEEDS AND PLANTS

Attention—In order to introduce our sweet Spanish onions, we will sell a few pounds of seed in small packages. The onion from this seed is mild and sweet and has no equal. Seed guaranteed. Orders filled as they come in. Plant December, January or February. Packages 30c. Kirkpatrick-Thompson, Sweet Spanish Onion Industry of California, 669 Eighth St., Riverside, California.

I Will Have One or Two Tons of Sorghum seed, especially selected for syrup making qualities for sale as long as it lasts. Send for list of different varieties, with description, prices and instructions for planting to get best results. Can send seed by parcel post. MARION GRABER, Hawthorne, California.

For Sale—Strawberry Plants, four varieties. Write for prices on Cane seed, Watermelon, and home grown garden seed. Prima Vista Gardens, R. D. 4, Arlington, Cal.

Strawberry Plants: Klondyke, Brandywine and other varieties. Best plants, quick service. Wholesale and retail. Price list free. V. R. Allen, Seaford-Del.

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R*O*S*E*S 50c per dozen. Fruit and Ornamental Trees. Plants, Vines, etc. Write for catalogue. KAVAN NURSERIES, San Bernardino, California.

Rhubarb Plants — Wagner's Giant Crimson Rhubarb plants, extra clean, 50 cents per dozen. $3.00 per hundred. Currier Bulb Co., Seabright, California.

FERNS—BULBS—ROSEBUSHES. Annual and Perennial plants. Write for catalogue. The Hoosier Florists, Escalon, California.

Peruvian and Common Alfalfa Seed—Specialty. Write for prices and sample. Box 501 Fowler, California.

TURKEYS

Eastern Bred Mammoth Bronze turkeys. Being sure my birds will give the usual satisfaction, I guarantee them to be as I represent. If not return at once C. O. D. R. M. Dodge, Stafford Farm, R. D. 2, Box 129, Bakersfield, California.

Bronze Turkeys—Mammoth Bronze Toms and hens for sale. Place orders now before prices advance. Also Collie dogs for herding. John G. Mee, St. Helena.

For Sale—Golden Bronze Turkeys.—Big boned breeding Toms of America's best strain. Eggs in season. M. M. Reiman, Planada, California.

For Sale—Mammoth Bronze Turkeys, the Best in the West. Geo. A. Smith & Son, Corcoran, California.

Bronze Turkeys — Mammoth Bronze toms for sale. Eggs in season. E. H. Varley, R. D. 1, San Jacinto, California.

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MY "TOP NOTCH"
GRAFTED WALNUT
ORANGES and
LEMON
TREES
now ready for you. Write, phone or call. William Pollard, 1831 S. El Molino Ave., South Pasadena, California. Colorado 1613.

Grafted Walnut Trees—Placentia Perfection and Eureka on northern black roots. Citrus stock one year old from selected fruit bud wood. Also all the leading varieties of fruit and avocado trees. Order your trees early and get the first choice. Geo. M. Ketscher, 702 Orange Ave., Santa Ana. Phone Sunset 229W.

Budded Avocados, Fuerte, Sharpless, Lyon, Dickinson, Blakeman, Puebla, Spinks, Taft, Linda, Rey, Queen, Knight, and others. A fine stock of field grown trees, $2.50 for one, $2.00 each by the 100, 25c per tree for packing. Newbery-Sherlock, 2202 East Colorado St., Pasadena, California.

For Sale—250,000 Homegrown fruit trees. Apricots, apples, pears, peaches, walnuts, etc. All stock guaranteed first class in every respect. You will save money by writing for our descriptive catalogue and low prices. Orange County Nursery Co., Box 235, Anaheim, California.

Plum Stock (P. D.) Immune to crown gall and black knot. Tested by State Pathological Laboratory of Whittier; unites perfectly with prune, plum, peach, almond, apricot and nectarine. Tribble Bros., Elk Grove, California.

Grafted Walnut Trees — Placentia Perfection and Eureka. A careful selection of grafting wood from the best groves of Southern California has been used on best black root stock. C. W. Story, Rivera, California.

No. 1 Grafted Walnut trees 6 to 14 ft. high, grafts selected from one of the best Placentia orchards in Orange County. Geo. M. Bullock & Son, Rivera, California.

Walnut Grafting Wood for sale—Selected Franquette, Mayette, Eureka and Payne, 5 cents foot. Bowman-Kuhn Ranch, San Jose, California.

For Sale — Seed Bed Stock, Orange and Lemon Trees, and Avocado Trees of all standard varieties. Walker - Hubbard Nursery Co., San Fernando, California.

Olive Trees—Mission, Manzanillo. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwacofer, Hemet, California.

Apricots, Peaches and Olives. Good thrifty stock and carefully grown. C. E. MOYER, Hemet, Riverside County, California.

For Sale—Highest grade of Placentia and Eureka walnuts on black root. A. R. Marshall, 1212 N. Ross St., Santa Ana, California.

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No War Prices.
Cash Nurseries, Sebastopol, California.

For Sale — Choice, young, thrifty Citrus Trees. W. W. Burns, 631 Security Bldg., Los Angeles.

For Sale—8000 Mission and Manzanillo olive trees. Bed rock prices. York Nurseries, Highland, California.

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Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale: inspection invited.

For Sale—Extra fine two year old Valencia trees with sour root. S. R. Coate, Anaheim.

Walnut Trees—Placentia and Eureka on black root. La Puente Walnut Nursery, Puente, California. Phone 103.

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We Want Agents in every territory to sell our line of products, practically an open field before you. Sells to farmers, homes, hospitals, asylums, schools, hotels and everywhere where human life is held dear, and animal life is to be increased, protected and made to pay better. Get in on some territory while there is still time. Repeat orders come easily. Disinfectants, Cholerine, Stock and Poultry Remedies. GERMO MFG. CO., 520 West 7th St., Los Angeles, California.

Wanted—Manager's Position on a modern farm, life experience in all classes of stock, and scientific poultry man, and dairy man with a well equipped farm can get results. Married, aged 48 years. No family, wife experienced in housekeeping, and poultry. Please state all particulars as to living conditions and salary in first letter. Refer. William Hodgson, R. D. No. 2, Box 242, Seattle, Washington.

Wanted—500 Angora goats, will buy or pasture. Address A. Cushman, Aguanga, California.

Want to Hear From Owner of Farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

CATERPILLAR TRACTOR WANTED. E. HYATT, HAZELTON, KANSAS.

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Pine Ridge Rabbitry, Monterey, California. A fine line of Flemish Giants, New Zealand Reds and Long Haired Blacks. All stock guaranteed. Write for particulars.

For Sale—New Zealand Red, Utility and pedigreed stock. Reasonable prices. Stephen E. Banneck, 330 E. North Hicks Street, Los Angeles, California.

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Several New and Slightly Used Engines. ARNOTT & CO., Implements, 112 S. Los Angeles St., Los Angeles.

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We always have a limited number of specially selected pigs for sale sired by Star Leader, now Grand Champion of the World, or by his son Anchorage Leader II. All pigs are well developed and are excellent value for the price asked. All are cholera immune and the Anchorage Farm guarantee is behind each pig. Write today for full information to Anchorage Farm, Orland, Cal.

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GRAPE WILD FARMS
A few fall boars left by Royal Superbus —also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
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Chester Whites, "BILLIKEN BRAND." How about the spring pigs, are you going to have some good ones? To produce those smooth, growthy kind you will need a "Billiken" boar. Have but 3 yearling boars left. Have 6 yearling gilts, bred for March farrow, for delivery during December. A few weaned fall pigs, both sexes. C. B. Cunningham, Mills, California.

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We Pay Cash for Hogs of All Sizes, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building. Broadway 4170. 3030 E. Vernon Ave., South 2712-J. Los Angeles.

Young Boar by OCK'S Chief Grand Champion Ohio and Indiana last year. Dam by Pathfinder's Perfection by Pathfinder. Sterling Smith, Route 1, Box 220, San Diego.

Mule Foot Hogs, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California. "The Blue Gums."

Duroc-Jerseys—We won more money on Durocs at the State Fair than any other exhibitor. Why not get some of this winning stock? June Acres Stock Farm, Davis, California.

Castleview Berkshires are the typey, modern, quick-growing kind, choicest blood lines. Prices reasonable. Castleview Ranch, Berkshires exclusively, Santa Rosa.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Calistoga, California.

Masterpiece-Superbus strain Berkshires. Choice stock from prolific breeders. Geo. A. Stingle, San Gabriel. Ranch Garvey Ave., two miles SW. of El Monte.

Carruther's Farm Berkshire Hogs — Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition. Live Oak, California.

Start Right — Registered Duroc-Jersey weanlings. Three for $35. Satisfaction guaranteed. Red Rock Ranch, Glen Ellen, California.

Duroc-Jerseys — We breed the champions. Peter, Lamson & Walker, Devore, San Bernardino County, California.

For Real Good Berkshires, cholera immune, write Frank B. Anderson, Box 724, Sacramento, California.

Greenwood Farm Durocs — "Size with Quality." H. C. Witherow, Palo Cedro, California.

Registered Durocs of the big type—Cholera immune. Derryfield Farm. Odd Fellows Building, Sacramento, California.

Poland-Chinas — A few good breeding boars. S. F. Williams, Orland, California.

For Sale—Registered Hampshire boar 16 months. F. J. Somer, Box 12, Moneta, California.

For Sale—Purebred March Duroc gilts $40 for quick sale. Address W. N. Vandermast, Santa Ana, California.

REGISTERED BERKSHIRES. FAIR OAKS RANCH, WILLITS, CALIF.

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Sixteen Weanlings, 11 yearling mules all from same Jack. Some good horses. If sold soon can be bought reasonable. Chas. Hubbard, Riverdale, California.

One or Two horses, cheap! Cash, part cash and White Leghorns or pigs. Rio Hondo Rancho, Downey, California.

GOATS

Largest Herd Swiss Toggenbergs on the Coast. 100 grade does bred to my $1000 Buck, Captain No. 256, A. M. G. R. Association, due to kid in February and March, $40.00 each, lots to suit. Crating $2.00 extra. Stamp. Rae P. Williams, Oakland, California.

Milch Goat, half Saanen doe bred to Nubian; has milked 600 days, still at it, $60. Miss B. Stocker, Freestone, Sonoma Co., California.

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Every Farmer can make money by caponizing his cockerels. Instruments $4.50. Caponizing cockerels 20c each. Send stamps for reply. Mrs. H. Ament, 1923 18th St., Santa Monica, California.

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HOT AIR
Is great stuff, coming up from the furnace, but it doesn't get you much of anywhere in the poultry business. Profitable results come from having experience, good judgment and work. Don't let the experience cost you too much—there's where good judgment comes in. How about buying chicks? Are you influenced by big claims, de luxe adjectives, exorbitant egg yields, high prices, cheap prices? Call on your good judgment again and play safe. When you can, investigate. Will you risk a card and send for our circular?

We hatch White, Brown and Buff Leghorns, R. I. Reds, Barred and White Rocks, Black Minorcas, capacity 12,000 weekly. Quality of breeding stock and chicks will please you as will also the price and service. You can order a score or thousands. Safe delivery guaranteed and prepaid price quoted when requested.

BREEDING COCKERELS FOR SALE
The Mission Hatchery, Box 27, Campbell, California.

Baby Chicks for Sale—100,000 S. C. White Leghorn chicks from heaviest laying (Hoganized) stock for delivery every month in the year, at very reasonable prices. Safe delivery of all chicks guaranteed. Shipped safely anywhere West of the Rockies. No money in advance; pay on delivery. Finest hatchery in the world. Established, 1898. Further information write Must Hatch Incubator Company, 438 Seventh St., Petaluma, California.

Baby Chicks—We specialize on Money Making White Leghorns. High record stock with records that are unimpeachable. Also Brown Leghorns, Anconas, Minorcas, Rocks, Reds, White Wyandottes and Buff Orpingtons. Especially Interesting Circular and Price List ready January 1. B. W. Archibald, Soquel, Santa Cruz Co., California.

VALUABLE 1919 CIRCULAR READY
Our 200-290 egg Leghorns, Anconas, Reds, Rocks, Minorcas, Wyandottes, Orpingtons, ducks, clear $5.00 for customers now. Breeders, pullets, chicks. Half booked for January, February, March delivery, last year's prices, many repeat orders. 30,000 capacity, hatcheries full now. James Beeson, Pasadena, California.

Thoroughbred Barred Plymouth Rocks, egg record 1917, 190 eggs per hen; 1918, 210 eggs per hen. Limited number settings December and January $2.50 for 15 eggs, chicks March, April and May 30c each. Call mornings. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California. Phone 5599.

Baby Chicks—From my vigorous, heavy laying, thoroughbred flock of S. C. White Leghorns. 14 years of most careful breeding for standard and laying qualities. Write for prices and particulars. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal.

Baby Chicks—Ready in January. Order early and get the date you want. White and Brown Leghorns, Black Minorcas, R. I. Reds, Barred Rocks. Safe delivery guaranteed. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto, California.

Heavy Laying S. C. Reds—Large vigorous cockerels and yearling males directly descended from New York, Boston, Los Angeles winners, $5.00 and $10.00. Satisfaction or money back. W. M. Marquam, Bishop, California.

Model Poultry Farm — White Leghorn Specialists. Our fifteenth year in business. Baby chix and hatching eggs for sale, also first class breeding cockerels. Our prices are right. W. C. Smith, Prop., Corning, California.

"Eastman's Bred-to-Lay" Hoganized and trapnested Barred Plymouth Rocks. JANUARY Chicks, Eggs, cockerels. Fairmead Poultry Farm, Fairmead, California.

White Leghorn Baby Chix from heavy laying (Hoganized) stock; $15.00 per 100. We guarantee safe arrival. The Pioneer Hatchery, 409 Sixth St., Petaluma, California.

Chix—Barred Rocks, R. I. Reds, Orpingtons, Anconas, Minorcas, Buff, White and Brown Leghorns. Breeding Cockerels. Enoch Crews, Seabright, California.

Blue Andalusian Cockerels—A fine well developed bunch from heavy laying strain. Get your order in early. Prices reasonable. J. R. Huddleston, 342 Edgeware Road, Los Angeles.

Chicks and Hatching eggs from heaviest laying scientifically line bred Hoganized White Leghorns on the coast. Circular free. Waldeck Ranch, Burbank, California.

Baby Chicks (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, California.

White Leghorn day old chicks from flock that averaged 174 eggs last year. Chas. K. Hale, Prospect Ave., R. D. 1, Santa Cruz, California.

Black Orpingtons Lay, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, California.

Baby Chicks, White and Brown Leghorns, R. I. Reds, Barred Rocks. E. W. Ohlen, Campbell, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, Cal.

For Sale — Bailey's Beautiful Barred Rock cockerels and pullets, eggs. R. P. Bailey, Spa, California.

PATENT ATTORNEYS

Patents that protect are secured through The PACIFIC COAST PATENT AGENCY, INC., Savings & Loan Building, Stockton, California; send for our little booklet on "Patents."

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SHORTHORN CATTLE, SHROPSHIRE SHEEP. Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., California. W. P. Dwyer and W. S. Guilford, Owners.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAlister Sons, Chino, California.

Registered Shorthorns (beef) calves and yearlings for sale. Both sexes, reds and roans. Choice goods breeding. Fair Oaks Ranch, Willits, California.

Ayrshires (registered) — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

Jersey Bulls and bull calves. Good individuals from producers. Write or come and select, N. H. Locke Co., Lockeford, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

For Sale—Pure Bred registered yearling Jersey bulls from the best families in the world. Close up. George T. Beckers, 7180 Clarington Ave., Palms, California.

Breeders of Registered Shorthorns—Milk Strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced.

For Sale—56 head registered Polled Hereford cows with 30 calves at foot, and 1 bull. Gay Owen, Calipatria, California.

REGISTERED JERSEYS FOR SALE. J. R. CARHART, FULLERTON, CAL.

Registered Guernseys for sale. P. J. Welsel, Santa Fe Springs, California.

MACHINERY

USED RANCH MACHINERY. Guaranteed to do same work as new. WE SELL FOR LESS. CALL AND SEE. WINDMILLS, 8-ft., $29 to $35; 10-ft., $39 to $45; 12-ft., $55 to $65; 12-ft. Aermotor with steel tower, $110.
REDWOOD TANKS, new, used, all sizes. NEW GALV. TANKS, 1000-gal., $42.50; 2000, $56. Used galv. tanks, 4500 gal., $95; 6500, $125; 8000, $140; fine for storing water or oil.
RANCH TOOLS: 10-ft. fine double disc drill, $110; beet drills, $35; 24-disc harrow, $45; broadcast seeder, 2-row bean cult., $45; fine 2-gang disc plow, $75; Avery tractor only used month, cost $610 for $450, runs like Metz; new 14-in. moldboard Rock Island riding plow, $55; Deere 14-in. riding plow, $35; single disc, $48; brand new 4-gang P. & O. tractor plow cost $330 for $230; 3-gang, $85; 4-gang, $110; spike harrows, $10 to $18; new alfalfa cult., cost $120 for $65; CABLE, 12c; sundries.
PUMPS: Plunger, centrifugal, rotary, many sizes, kinds. Cylinders, rods, piping, fittings. DEMITT CO., UPSTAIRS, 120 N. Main, Los Angeles. Also buy.

For Sale—One 5 inch Byron Jackson two stage pump; one 6 inch Byron Jackson single stage pump; one 8x10 Rumsey Triplex pump with Morse safety chain and sprockets; one 35 H. P. Fairbanks Morse distillate engine; 900 feet 12 inch steel water main; a number of gate valves from 2 inch to 8 inch. Write for information to L. Judd, Secretary San Ysidro Irrigation District, San Ysidro, California.

For Sale—Bean "TrackPULL" Tractor, A-1 condition, used less than 50 hours. Make an offer. Can be seen quarter mile east of Thermal, California. Reason for selling I am in the Army and need money. Cadet W. F. McIntyre, March Field, Riverside, California.

Waterloo Boy Tractor, two speed, all bearings incased, runs in oil, very little used. Also new Knapp orchard tractor plow. H. S. Blossom, Lakeside, California.

Gasoline Engines, the largest stock of Used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

For Sale—No. 18 Holt Tractor, Moline 4-Disk plow, 8-ft. double-disk harrow, 12-ft. orchard drag. Terms reasonable. Mrs. C. H. Euans, Gilroy, California.

Pumping Plant, deep well, capacity 25 inches. Reginald H. Jones, Los Angeles. 57227.

AGRICULTURAL IMPLEMENTS

IMPLEMENTS AND RANCH SUPPLIES. Samples and slightly used. Four floors. Large stock. Liberal credit. Save 50 per cent on some. No branches. ARNOTT & COMPANY, INC., The Yellow Front. Established 1892. 112-118 S. Los Angeles St. Los Angeles.

LUMBER

Lumber-Sash-Doors-Plumbing - Supplies —Building materials of all kinds. New and second hand "A"R.W. shingles 60c per bundle. Send list for estimates. Dan P. (Mission Street) Dolan, 1620-1650 Mission Street, San Francisco.

DUCKS

For Sale—25 choice White Pekin ducks selected for breeders, now laying, weight 7 to 8 pounds each. A. O. & P. M. Forster, 2918 Otis Street, Berkeley, California.

For Sale—Runner ducks—280 egg stock. Pure bred genuine Hershberger strain, also Pekin ducks. English long hair fur rabbits. P. O. Box 221, Santa Ana, California.

PIPE

"TESTED" and "GUARANTEED" Screw pipe, casing, valves and fittings. Riveted slip joint pipe; all sizes. New and used. "Pacific" pipe for all purposes.
PACIFIC PIPE CO., Main and Howard Sts., Est. 1906. San Francisco

For Sale—5500 feet 10-inch, No. 14 used riveted steel pipe, 2800 feet 11-inch, 2500 feet 12-inch, 2000 feet 4-inch. L. B. Vollmer, Monrovia, Cal.

MISCELLANEOUS

Soil Analysis: Is It Worth While?—Here is an answer that everybody can understand: it gives PRACTICAL RESULTS. It brings the user of abundant returns,—1st, in the saving of fertilizers; 2nd, in increase of his crops; 3rd, in improvement of his groves. I ask everyone whose citrus grove is not doing all that it should do to send for my free new folder (a post card will do) which gives much interesting information on the subject. R. R. SNOWDEN, Agricultural Chemist, 320 Stimson Building, Los Angeles, California. Phones: Office Pico 842; residence West 702.

CORRUGATED IRON—LUMBER. We are wrecking the Pacific Portland Cement Company's old plant near Suisun, and have about 100 tons of fine corrugated galvanized iron. Will fill orders any size.
We are also taking down the old Tanforan Race Track, and have about 1,000,000 feet of fine lumber and several thousand feet of good T. & G. redwood. Lumber sold in carload lots only. Get in touch with us.
THE MENDELSON CO., 748 BRANNON ST., SAN FRANCISCO.

I Ship 10 pounds walnuts for $3.00; 1 box of lemons 45 to 48 for $1.00 prepaid any express office. Have dried prunes and apricots. Ernest Vince, Santa Barbara, California.

Made of Redwood, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

For Sale—600 10-gallon Hisslow smudge pots, orchard heaters, in good condition. Address H. D. Meyers, 23 N. Raymond, Pasadena, Fair Oaks 3145.

For Sale—Walnut grafting wood or budding wood from vigorous proven Eureka walnut trees. Dr. C. A. Anderson, Zelzah, California.

To Reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

For Sale—700 smudge pots in good condition, mostly filled, some extra fuel; $200 for the lot. G. A. Starrett, Rialto, California.

QUESTIONS AND ANSWERS

Continued from Page 645

Removing Tree Stumps

Please tell me how one can easily remove tree stumps out of the ground. —J. A. Smith, Owensmouth.

The method to be used in removing tree stumps depends altogether on the size of the stumps to be taken out and the texture of the soil in which they grew. Small stumps up to ten or twelve inches in diameter can be removed cheaply by any of the stump pulling machines but those of larger diameter will have to be removed by specially heavy machines or by the use of dynamite. Dynamite can be very successfully used on large stumps to split them into small sections which may be removed by a light stump puller.—J. B. N.

Getting Rid of Spiders

Will you kindly inform me of any method of doing away with spiders (black and otherwise) in a house? Have just rented one that is infested. Is not air tight enough to use formaldehyde efficiently. Also would like to know an antidote for black spider bites.—Subscriber, Alpaugh.

It will be very difficult to free the above described house from spiders. Spraying the sides with carbolic acid diluted with water, using one pint of carbolic acid to 25 gallons of water will afford temporary relief. If vines or bushes are growing on or against the sides of the house it will benefit greatly to build trellises and train the vines two or more feet away from the house. There are but few spiders that are dangerous because of biting persons. Probably the only one found here, and that only occasionally, is a black spider with a body not larger than a small pea and having a reddish spot on the under side. Dampened soda or borax, if applied immediately, is used as a remedy for all insect bites, and permanganate of potassium dissolved in water is also very efficient. The efficacy of any of these remedies depends on their immediate application as the poison soon spreads through the tissues and is out of reach of simple remedies.—J. B. N.

Bleaching Walnuts

I would like to hear in your paper the best methods of bleaching walnuts which you know of being used, the time to leave in the bleachers, do they wet them and do they dry after? —Subscriber, Napa.

The commercial bleaching of walnuts is not practical in a small way but the following formula and method may be helpful if only a few hundred pounds are to be processed and there is no association of which you can become a member. The walnuts must be perfectly dry before the bleaching is attempted.

Twenty-five pounds of bleaching powder (chloride of lime), 18 pounds sal soda, 50 gallons of water. Made by dissolving the bleaching powder in water, allowing insolubles to settle; then draw off the clear liquid and to it add the dissolved sal soda; agitate, and then allow the calcium carbonate to settle; draw off the clear liquor and make up 50 gallons with water. This should weigh about 425 pounds avoirdupois.

To bleach.—Use this liquor, adding sulphuric acid (strength 43 degrees B) in such quantity as not to amount to over .15 of one per cent absolute sulphuric acid in the whole bleaching mixture—in other words, to the 425 pounds bleaching liquid add one and one-fourth pounds of sulphuric acid of strength 43 degrees B, i. e., 50 per cent acid.

Dip the nuts five to ten seconds; then wash with water and dry at once. Do not use metal containers for the liquid at any time nor metal baskets to dip the nuts.—J. B. N.

Pruning Blackberries

On returning to a neglected place I found a tangled thicket of blackberry vines. I am cutting out the dead canes. The living ones are very tall, seven or eight feet high. Should they be trimmed back or left as they are? —Subscriber, Escondido.

A complete answer to the above would require more data on the conditions, whether the canes are in rows, and the number of them, etc. The ideal condition for the number of canes is in rows about eight feet apart and four to six canes every five or six feet in the row. If there are more than this there should be a thinning out of the number. When the new canes start in the spring about the above number should be allowed to grow, the others taken out when small. The bearing canes will have a number of branches. Some of them may be four feet or more long. The upper ones shorter. The main cane should be cut back to a point near the upper branch and at least half the length of all the branches cut off. If there is any shortage of water for irrigation cut off at least two-thirds the length of the branches. Under this treatment and with a good irrigation every week after the berries begin to show red a large crop of fine berries may be expected. Unpruned berries almost invariably start many more berries than the canes can properly mature. They are small and usually have a hard core that does not soften properly when cooked. Well pruned, the berries are large and without the hard core and in all respects much more satisfactory.—H. C.

EXPRESS EMBARGO REMOVED

The embargo on the shipping by express of standard bred poultry for breeding purposes has been removed. This is good news to the poultry breeders of America as all shipments will be carried by all express companies without delay.

Ices and sherbets may now be manufactured. Restrictions were removed December 1.

WHY NOT FEED ACORNS?

According to C. Hart Merriam, who writes in the August Geographic on "The Acorn; a Possibly Neglected Source of Food," the acorn is worthy of more attention than it has hitherto received from poultry feeders. The Indians of California from the earliest times have been accustomed to gather the acorns in the fall and pound the meats, after they are dried, into a kind of flour or meal which is dried and stored away to be made into mush and bread. This flour, which is at first very bitter, is leached with warm water until the bitterness has disappeared. It may be mixed with corn meal or white flour in the proportion of one part acorn meal to four parts corn or wheat or made into bread or mush by itself. The mixture is considered more palatable, but the Indians often use the acorn meal alone.

The analysis of acorn flour shows that when leached it contains 11.34 per cent water; .29 per cent ash; 19.81 per cent fat; 4.48 per cent protein; 62.02 per cent carbohydrates and 2.06 per cent fiber. The above analysis was made from very old flour from the California black oak. Another sample from the California valley white oak yielded: water, 8.7; ash, 2; fat 18.6; protein 5.7, carbohydrates, 65. These analyses show that while acorn meal would hardly be suitable for laying hens, since it contains too much fat, it would be an excellent fattening feed for chickens and turkeys, as it is known to be for pigs. It contains from 18 to 25 per cent of nut oil, and when mixed with other meals, should be valuable wherever oil or fat is useful.—J. A. Koethen.

BEST FEED

There is no best feed. This for several reasons. Every poultry feeding center has different transportation problems and also some home grown feeds may afford much cheaper feed than imported stuffs, but there are many most excellent proprietary feeds. Then there is dried buttermilk, cotton seed products, cocoanut products, packing house wastes and other similar concentrates which may be added to local grown stuff. Mrs. Koethen has recently given hearty recommendation to certain proprietary poultry feeds and adds:

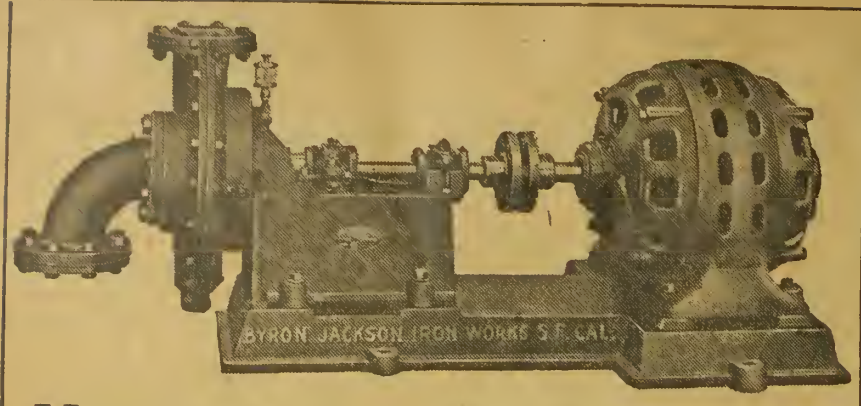
If you prefer to mix your own mash, this one, which is recommended by Professor Jaffa, is composed of ingredients generally accessible at this time: Six parts bran (by measure); two parts ground barley; one part corn meal; one part alfalfa meal; 1 part soy bean meal; one part beef scrap; one-half part coarse bone meal. Linseed meal could be substituted for the soy bean meal if you prefer, but the soy bean meal is preferred by most feeders. If you have fed only bran and beef scrap, it might be all right to leave them in hoppers separately before the hens, but they are too fond of the dry buttermilk to have free access to it, and linseed meal, if fed freely, is hard on the digestion. It is better to mix all together into the dry mash and thus compel the hens, as far as possible, to eat a balanced ration.

JUST SO

First Scout: "What is the difference between ammonia and pneumonia?"

Second Scout: "Search me!"

First Scout: "Ammonia comes in bottles and pneumonia comes in chests!"—Boys' Life.



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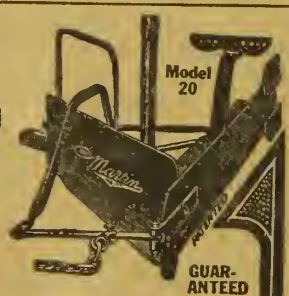

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Gold Nugget Strain

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Poultry at the Liberty Fair

Written for California Cultivator By Jean A. Koethen

IT IS always a rather difficult matter for one who is not up on all the show points of all the breeds, to describe a poultry show intelligently. You feel shaky for fear you may not notice which bird has the color special or the shape special for its breed, or may pass by the best Ancona or the most perfect Andalusian without an appreciative glance. That is why I leave it to the list of awards to say which bird was best in each particular and confine myself to more general topics.

Considering the number of postponements, and the nearness in date of two other shows, the Liberty Fair show was a surprisingly good one. Not in numbers, for a large show could not be staged in the limited room under the grandstand, but in quality. The birds were good, all of them, and some extremely good. There was a good crowd looking at them, too, — not all at once, but a steady stream of poultry lovers, farm folks and city people, admiring, discussing, taking notes of breeders' names and addresses. One only needs to attend such a show occasionally to realize how near to the hearts of the whole world are its feathered pets.

The first impression of the Liberty Fair show was a red one. Rhode Island Reds were twice as numerous as birds of any other breed. I counted 140 entries and may have skipped some. "Red" alley was worth going a long way to see and was constantly filled with admirers of these useful and beautiful birds. It is interesting to note in passing that more than one strain of Reds is now advertised as "bred to lay." An enthusiastic breeder called my attention to several eggs in the nest boxes in his utility pens—and the fact that he had provided nests was sufficient proof of his faith in his hens. Nothing could stop their laying. He also told me of a pen of six hens that averaged over 200 eggs apiece last year. It is a fine thing that we are coming to demand egg records as well as type in exhibition birds.

If the first impression of the show was red, the second was white. White Wyandottes, which have been somewhat neglected on the Coast, though very popular in the East, were out in full force. And such fine specimens. Evidently several skilled breeders are taking them up,—a move which will be for the interest of the entire poultry industry. Beauty, fecundity, rapid growth and excellent table quality are found in one package—so their admirers say. They are as good layers as the Reds and reach broiler size sooner.

Light Brahmas, Anconas and Andalusians were all rather large classes, but if I am not mistaken all the Brahmas and Andalusians came from the yards of two or three breeders. Mrs. Babb's Brahmas, which have attracted much attention at recent shows were conspicuous for their absence. Mrs. Kate Hamilton and J. R. Huddleston have made a great success with Andalusians, but have apparently few followers, probably because blue birds are more difficult to breed than other colors. Anconas have been taken up by several breeders who had already made reputations with other breeds, among them A. A. Bamford, the White Rock man, a fact which certainly speaks well for the solid virtues of this attractive breed.

I counted 64 Anconas, 47 Light Brahmas, 37 Andalusians and 30 Black Minorcas. Other classes were smaller but contained many good birds, among them W. G. Stewart's Orpingtons which always take most of the Orpington ribbons. There was the usual sprinkling of Hamburgs, R. I. Whites, Sussex, Rhinelands, White and Buff Rocks and good, but small classes of Barred Rocks and Cornish. White Leghorns were too busy, perhaps to be out in large numbers, but there were some good utility yards and several excellent single entries. Bantams were out in all colors and styles, including Black, White and Buff Cochin, Rose Comb Black, Partridge, Silver Duckwing, Black-breasted Red Game, Patriot and Crested Polish.

Perhaps no other exhibit attracted as much attention as the turkeys. There was a long string of the Mammoth Bronze variety, all big, vigorous, attractively colored specimens, a credit both to their owner and to the show, and a few fine White Hollands. A few Toulouse geese and Runner and Rouen ducks made up the water fowl display.

If it is true, as we like to believe, that the annual poultry show indicates the prevailing fashion in feathers, then we must conclude that the hen highest in public favor this year is the hen that is both a "looker" and a layer. Fine feathers are all right and greatly to be desired if they adorn a productive body. If not, points are of little value. Our utility stock is being steadily brought to standard in type and color and our show stock is being bred for eggs as well as points. This is as it should be and is perhaps only of many results of the war.

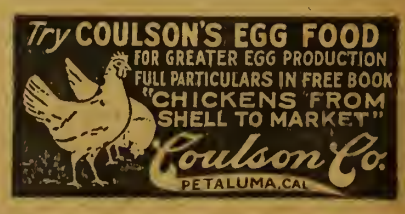
CAPONS ON THE FARMS

By Mrs. H. Ament

Capons are profitable anywhere but particularly on the farm because they can range and pick up one-half their feed. Every cockerel is a waste and expense and every poultry man wants to know what to do with him. If you caponize him you have turned waste to profit directly and indirectly.

Directly, because a rooster will eat twice what a hen will eat and produce only sex energy; indirectly, because the poultry yard will be quiet and "Biddy" can lay more eggs and infertile ones. When a cockerel is about six or eight weeks old the sex organs should be removed; at once they will begin to grow large and awkward and this will continue for six months when they will take on flesh until they weigh from 10 to 15 pounds.

Turning your cockerels to some account is a satisfaction, but selling a bunch of real capons in February and March, when there is no poultry meat, and realizing from $5 to $7.50 on each capon is gratifying to say the least.



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TRUCKS FOR RURAL PARCEL POST

By Robert H. Olcott

The intention of the postoffice department to enlarge the rural parcel post by the installation of trucks, and thereby reduce the cost of postal transportation sufficiently to compete on an even basis with freight rates in an effort to reduce the high cost of living, and incidentally make use of the large number of trucks which the government will have little use for, now that the war is over, stimulates the hope that the producer and consumer are on the eve of a decidedly better acquaintance. For it has long been known that in most instances the high cost of distribution is one of the main reasons why city folk have to pay such a large price for products which net the producer but a modest return for his labor.

But even under present conditions the parcel post affords an opportunity for the farmer in remote sections to profitably dispose of some of his extra products for cash to the city resident to a far greater extent than is commonly practiced.

Take for instance, farm cured bacon and pork. There are any number of farmers living within 200 miles of the city who raise say 100 pounds of pork more than they consume, whose only market is the general merchant in their locality to whom they trade this extra meat, at a very reasonable price, together with their other products, for the staples which they have to have; the commodity of money rarely entering into the transaction.

On the other hand there are plenty of people, including the writer and several of his neighbors, who would welcome a chance to buy for cash smoked or salt pork at regular intervals, at the price which the country merchant pays for it (in trade), or even a little more; and at this time of the year might even take a half or whole hog (dressed) and divide it up among ourselves. Thus making it better for all concerned. And there is no reason why a market for other spare products cannot be found in the same people who buy the meat. All that is necessary is to see that the quality and price are right and that the product is well packed. All of which should be very simple.

TRACTOR PRODUCTION IN THE UNITED STATES

An investigation of the tractor situation in this country recently was completed by the office of farm equipment control of the federal department of agriculture. In connection with this investigation a report was received from every tractor manufacturer in this country concerning the number of tractors manufactured and their distribution between January 1, 1916, and July 1, 1918.

A summary of these reports is given below:

Number of Tractors Manufactured

1916	29,670
1917	62,742
January 1 to June 30, 1918	58,543
Total for 1916, 1917, and first half of 1918	150,955

Number of Tractors Sold—

To users:	
1916	27,819
1917	49,504
To exporters:	
1917	14,854
1918, first six months	15,610
Number of tractors on hand, in transit, or in hands of dealers at time of report (August, 1918)	11,388

Deep plowing will destroy grasshopper eggs and save the spring crop.

GOPHER A SERIOUS CROP PEST

The pocket gopher does more injury to crops than any other mammal. Exterminate it by using poisoned potatoes or apples or by trapping, advises Dr. Lee R. Dice, instructor in zoology in the Kansas state agricultural college .

"Alfalfa fields furnish almost ideal conditions for the development and multiplication of gophers as their burrows are not broken up by plowing and the root system provides an abundance of food.

"Gophers are stupid animals and will blunder into almost any trap that is properly set, and they can be poisoned easily at little cost and labor.

"The natural food of gophers consists of roots and seeds and succulent vegetation drawn down from the usrface. Hence a substitute of poisoned potato, sweet potato or apple can be used effectively. A few grains of strychnine inserted by means of the tip of a pen knife into such food placed in the burrows will serve the purpose. A sharp stick can be used to open the tunnel.

"Trapping is effective, steel traps set in tunnels being recommended. The light should be excluded by a board, which will also serve to keep the opening free from dirt. If this is not done the gopher will come with a load of dirt to fill up the hole. Other traps are on the market.

"Besides destroying the root systems the gopher covers much vegetation with mounds of soil. This often hinders harvesting as well as covers the grain."

TRACTORS RELIEVE BRITISH FOOD SHORTAGE

Changes in agriculture due to war are especially striking in the United Kingdom, where tractors have made possible increased crops in the face of a labor shortage. Since the beginning of the food campaign in November, 1915, when it became evident that the war would be long, Great Britain has imported more than 8,000 American tractors, and has orders outstanding for about 5,500 more.

Due largely to the operation of these machines, the combined acreage of wheat, barley, oats, rye, corn and potatoes in England and Wales is about 33 per cent greater this year than in 1916. According to the American consul general in London in a statement received by the United States food administration, the use of tractors in plowing has completely revolutionized farming methods. It is pointed out, however, that the large increase in cultivated land has been possible partly through plowing up pastures, and the cattle industry has consequently declined. This condition emphasizes the dependence of Great Britain on the United States for beef.

CHEAP BAGS FOR BEAN GROWERS

The California Bean Growers' Association announces that it has secured a special lot of bean bags at a reduced price and that its members may purchase these bags from the association at actual cost and without the addition of any brokerage or commission.

The quantity now on hand is 100,000 of 100 pound bags, the price of which to members will be 25¼ cents f. o. b. San Francisco. The association also has 50,000 of 80 pound bags which can be furnished the members at 20½ cents f. o. b. San Francisco. This offer is of course subject to prior sale, members being supplied in the order in which they filed their application.

What Keeps the Tractor on the Job?

You can't get full service from your tractor, unless *all* the fuel is ignited instantaneously. The one sure way to get the full power that comes from this complete ignition, is to have

BOSCH
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The rip-roaring Bosch sparks drive into the firing chamber with such penetrating power that all the fuel is completely ignited.

Besides this powerful spark, Bosch has the rugged, sturdy staunchness that stands under the hardest use. It will see you through any job, however tough and do it year in and year out.

With the big, strong, simple Bosch Impulse Starter, now in general use, you also will be sure of quick, easy starting.

Bosch costs more than ordinary ignition systems. Yet it is standard equipment on many fine tractors, because the manufacturers know it is the best. They want to be sure of giving real service, even at higher cost to themselves.

Whatever the make of your tractor, it can have a Bosch Magneto. The maker will install Bosch if you ask for it when you order, and the tractor you already have can have a Bosch fitted by any Bosch Service Station.

Be sure to specify: "Bosch Magneto Ignition" on your order

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Inspect Your Roofs Now

Take no chances. If they show indications of leaking have them repaired before it is too late. Losses that are irreplaceable may occur from defective roofs.

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is inexpensive yet it makes an efficient, weather resisting covering for every building. Its long life and attractive appearance make it a favorite with careful buyers everywhere.

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The Western pulverizes, packs, mulches and makes a perfect seed bed in one operation, saves time, horse power and ⅓ seed, still producing a better stand. Seed will start at once when seeded. Especially adapted for breaking crust on growing grain, will break the hardest crust, forming it into a moisture-retaining mulch without injuring growing grain and will raise a crop with half the moisture during growing season.

MADE IN 12 SIZES, 1 AND 3 SECTIONS FOR HORSES AND TRACTORS

This year's crop will bring high prices; make it a record breaker by using the Western. Free illustrated catalog describing machine and its principle, shows its work by pictures taken in the field, gives nearest shipping point to you, contains valuable information on up-to-date farming. Worth its weight in gold to farmers and land owners. Send for it today.

Western Land Roller Co., Box 400 Hastings, Neb.

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Eucalyptus Damaging Orchard

Four years ago I bought land and set it to lemons; my neighbor had a row of young eucalyptus about one foot on his side of the line. The eucalyptus get no irrigation except from my grove. The result is my first two rows of lemons are greatly stunted. Have I a right to put a ditch on the line and cut the eucalyptus roots, or could I compel my neighbor to do it? Could he be compelled to dig up the eucalyptus trees?—Subscriber, Long Beach.

It has been directly decided in this state that where the trunks of trees are upon one property and the roots and branches extend into or over adjacent property that said roots and branches are the property of the owner of the adjacent property; he is entitled to cut them off at the division line and cut the roots, and thus himself abate the nuisance. Or he may bring action for damages and to compel the owner of the trees to abate the nuisance; such would doubtless be your best proceeding as there is but little question that in the case of eucalyptus trees, by reason of their quick growth and water searching proclivities, any ordinary ditching would only afford temporary relief and the shading of the trees would undoubtedly have a bad effect; the trees should be eliminated.

Stolen Bicycle

I left a bicycle in a shop for repairs. When I called for it I was told it had been stolen by thieves who had broken in. Must I lose the bicycle or must the repair man make it good?—Subscriber, Perris.

This being a case of deposit for mutual benefit of the parties, the depositary is bound to use ordinary care in relation to the bicycle and is responsible only for ordinary negligence. He is not an insurer of the property nor is he responsible for losses resulting without his negligence such as by theft or fire. If the bicycle was placed in his shop, the shop locked up securely and in the usual manner of such shops, then he is not liable for the theft of the bicycle.

Liability of Stockholder

I own stock in a corporation which is pursuing a policy which I consider disastrous. There is no market for the stock. How can I avoid liability for my share of any further liabilities incurred by the corporation?—Subscriber, Glendora.

There is only one method pointed out by the code and that is an unconditional transfer of the stock upon the books of the corporation. If you are considering only the avoidance of liability the stock of the corporation is doubtless practically worthless and a very trifling consideration would be ample compensation; it would not affect the validity of the sale that the person to whom you should sell might be execution proof; but you should be careful to see that there was an actual transfer of the stock upon the books of the corporation into the name of the vendee, a cancellation of your stock certificate and issuance of new certificate in the name of the vendee.

Straw Not Paid For

During this season I let a man, claiming to be a government buyer, have straw for which he agreed to pay as soon as baled. He baled the straw and shipped it, but has failed to pay for it or answer my letter. How should I proceed to get my pay?—Subscriber, Gridley.

The method stated is hardly the usual method pursued by the United States government in purchasing, and it is possible that your buyer may turn out to be a man of straw. You might ascertain the name of the consignee and where the straw was shipped to, also the name of the consignor and his title, if any; this may be ascertained from the railroad agent. If it is in fact a government shipment, you can thus trace out the department and properly place your claim; if not you may locate your man or set of men and take the matter up with the district attorney of your county or with the United States district attorney.

THE LIBERTY FAIR

Continued from Page 627

movement from ground beyond the roots on all sides, and, if irrigated, will suffer from too much free water held in the broken area by unbroken walls about it. Lines of charges should follow rows of trees at least one way, and if possible both ways. The middles of the squares may be left for blasting later on if desired.

Trees and other crops planted on hardpan soil that is not broken are bound to suffer during dry weather from a direct lack of water, owing to the failure of the moisture movement in the compacted ground beneath the roots. They also may starve, even though fertilized heavily, because of the lack of humus and bacterial action necessary to make the plant food available and to deliver it in proper solution to the roots. Trees in hardpan also suffer from wind damage. Blasting their immediate beds enables them to anchor themselves, but does not by any means bring about right feeding conditions.

The orchards and the garden offer particularly easy means of developing local experience in this method of managing hardpan. A small area well broken up, and given plenty of humus in the form of cover crop roots, soon ought to demonstrate its superior productiveness. On the results then can be based the plans for the larger expenditure necessary to treat many acres.

FEEDING VALUE OF SKIMMILK

Experiment station trials on 740 pigs show that when properly fed as a supplement to cereal grains (say, one pound grain to three pounds milk), 100 pounds of skimmilk will replace 28 pounds of grain that would otherwise have to be fed without the skimmilk. Using this as a basis the Michigan College of Agriculture figures out the relative value of 100 pounds of skimmilk with grain at varying prices:

Cereal grains Price per 100 lbs.	Relative value of 100 lbs. skimmilk
$1.00	$ .28
1.25	.35
1.50	.42
1.75	.49
2.00	.56
2.25	.63
2.50	.70
2.75	.77
3.00	.84
3.25	.91
3.50	.98
3.75	1.05
4.00	1.12
4.25	1.20

DIFFERENT

Upgardson: Some men will cut your throat for 75 cents.

Atom: Yes, and some won't The surgeon that opened by windpipe once and took out a fragment of chicken bone charged me $75.—Chicago Tribune.

EVERY ONE SATISFIED

During the Southern California Fair held at Riverside last month the local Red Cross chapter conducted a raffle for a Duroc-Jersey boar bearing the militant name of General Pershing. A member of the Cultivator's staff happened to be the winner and the General became the property of this paper and an immediate problem.

Of course we have always been interested in this particular branch of animal husbandry and have entertained the hope that some day we might take a place in the ranks of the breeders, but we have always felt that we would prefer to select the time when it would be most practicable. Naturally, then, to suddenly acquire a pig—and a boar pig at that—when we were in no way prepared to properly take care of "half a herd" was disturbing, to say the least.

In casting about for a way out of our difficulty, and at the same time provide an opportunity for the General to aid in the campaign for more and better hogs in California, we decided to present him to the George Junior Republic at Chino and and we are just in receipt of the following letter from C. M. Davis, managing director of that institution:

"Our Mr. Condee has just handed me your letter to him of October 31 in which you state that the Cultivator desires to present to the Junior Republic the fine Duroc-Jersey boar known as "General Pershing."

"On behalf of the board of trustees, and the writer in particular, I wish to extend to you our great appreciation of this gift. It helps in such a fine way with our boys, as it shows to them, in a marked way, just how friends on the outside interested in stock raising, feel toward the Republic, and the way our boys are caring for our animals and their growing interest in the stock industry.

"Mr. Condee feels that we can use "General Pershing" to great advantage in the betterment of our herd."

General Pershing was bred by the Fontana Land Company, and was sired by Educator Col. and his dam was Crimson Lady Wonder.

"Right and liberty have obliterated space and the ocean to bring France and America together."—President Poincare.

They wear like iron—

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6714—Children's Dress. Cut in sizes 4, 6, 8 and 10 years. There is a broad box-plait at the center front of the blouse, with a corresponding plait in the skirt.

9055—Ladies' and Misses' Waist. Cut in sizes 34, 36, 38, 40 and 42 inches bust measure. The lower edge of the vest is cut in points which extend down over the girdle.

9054—Ladies' and Misses' Shirt Waist. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. The collar is cut in fancy outline and is edged with a lace frill.

9077—Ladies' Dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. The waist is semi-fitted and the skirt is a two-piece model.

9069—Ladies' and Misses' Dress. Cut in sizes 16, 18 years, and 36, 38, 40, 42 and 44 inches bust measure. The two-piece skirt is gathered to the underwaist.

9063—Child's Undergarment. Cut in sizes 2, 4, 6, 8 and 10 years. The garment fastens at the right underarm and is well reenforced.

9057—Ladies' and Misses' Four Piece Skirt. Cut in sizes 16, 18 years, and 26, 28, 30 and 32 inches waist measure. The skirt is gathered at the side-fronts and back to the slightly raised waistline.

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PATTERN DEPARTMENT
CALIFORNIA CULTIVATOR
Los Angeles.

Household Department

THE LITTLE GRAY LAMB

Out in the endless purple hills, deep in the clasp of somber night,
The shepherds guarded their weary ones —guarded their flocks of cloudy white,
That like a snowdrift in silence lay,
Save one little lamb with its fleece of gray.

Out on the hillside all alone, gazing afar with sleepless eyes,
The little gray lamb prayed soft and low, its weary face to the starry skies:
"O moon of the heavens, so fair, so bright,
Give me—oh, give me—a fleece of white!"

No answer came from the dome of blue, nor comfort lurked in the cypress trees;
But faint came a whisper borne along on the scented wings of the passing breeze:
"Little gray lamb that prays this night,
I can not give thee a fleece of white."

Then the little gray lamb of the sleepless eyes prayed to the clouds for a coat of snow,
Asked of the roses, besought the woods; but each gave answer sad and low:
"Little gray lamb that prays this night,
We can not give thee a fleece of white."

Like a gem unlocked from a casket dark, like an ocean pearl from its bed of blue,
Came, softly stealing the clouds between, a wonderful star which brighter grew
Until it flamed like the sun by day
Over the place where Jesus lay.

Ere hushed were the angels' notes of praise the joyful shepherds had quickly sped
Past rock and shadow, adown the hill, to kneel at the Saviour's lowly bed;
While, like the spirits of phantom night,
Followed their flocks—their flocks of white

And patiently, longingly, out of the night, apart from the others—far apart—
Came limping and sorrowful, all alone, the little gray lamb of the weary heart,
Murmuring, "I must bide far away;
I am not worthy—my fleece is gray."

And the Christ Child looked upon humbled pride, at kings bent low on the earthen floor,
But gazed beyond at the saddened heart of the little gray lamb at the open door;
And he called it up to his manger low and laid his hand on its wrinkled face,
While the kings drew golden robes aside, to give to the weary one a place.
And the fleece of the little gray lamb was blest;
For, lo! it was whiter than all the rest!

In many cathedrals grand and dim, whose windows glimmer with pane and lens,
'Mid the odor of incense raised in prayer, hallowed about with last amens,
The Infant Saviour is pictured fair, with kneeling Magi wise and old,
But his baby hand rests—not on the gifts, the myrrh, the frankincense, the gold—
But on the head, with a heavenly light,
Of the little gray lamb that was changed to white.

—Archibald Beresford D. Sullivan, in St. Nicholas.

GREEN PAINT

(Continued from last week)

THIS was after they had been painting for fully three-quarters of an hour.

The first note of revolt was sounded by Thomas. Thomas, very red faced, straightened up, holding his back.

"Say, you know this is some work?"

"Bet!" Turpin painted on with a dogged hand for a moment. Then he paused and glared from under his handkerchiefed head across the fence at his twin. "Say, what you think you're doing?" he demanded belligerently. "You better not take off those overalls!"

"Who said I was taking 'em off?" Thomas glared back. "I ain't taking 'em off. I'm just holdin' 'em out from me a little ways, to cool me!" Fretfully he resumed work.

In a moment he stopped again.

"I'm going to get me a drink," he announced.

"So'm I."

They went in to the house swiftly, returned laggingly. After the dim coolness of the indoors the temperature out here was unbearable. An intense burning stillness reigned; the white cement walk blinded their eyes; Mr. White's old collie, next door, panted as he lay under a tree. The boys picked up their brushes.

It was not long before Turpin succumbed, fell flat to the earth and lay on his back on the grass.

"I'm going to quit!" he declared. "I ain't going to do another lick!"

"I ain't neither!" Thomas also dropped.

They reclined, lethargic, for a moment. Then, at the same instant, the same thought struck them. Dad might be very glad to have the fence painted but would he be so agreeable about a fence left halfway painted? They gave the fence a squint. It did look patchy. A layer of green over an old one of brown is not really thorough and they had forgotten to do the edges so that the pickets presented the appearance of a row of faded maiden ladies beautified as to cheeks and chin but with ears and neck sadly neglected.

The boys arose. It was unnecessary for either to explain. They were adept at mind reading. All that was said was what Turp said:

"I'm goin' to get me another drink 'fore I begin. What you hafto tag after me all the time for?" fiercely. "Stay where you're at—I'll bring you a drink if you're so thirsty as all that!"

THERE were shepherds abiding in the field, keeping watch over their flock by night. And, lo, the angel of the Lord came upon them, and the glory of the Lord shone round about them; and they were sore afraid. And the angel said unto them, "Fear not: for, behold, I bring you good tidings of great joy which shall be to all people. For unto you is born this day in the city of David a Saviour which is Christ the Lord. And this shall be a sign unto you; ye shall find the babe wrapped in swaddling clothes, lying in a manger."

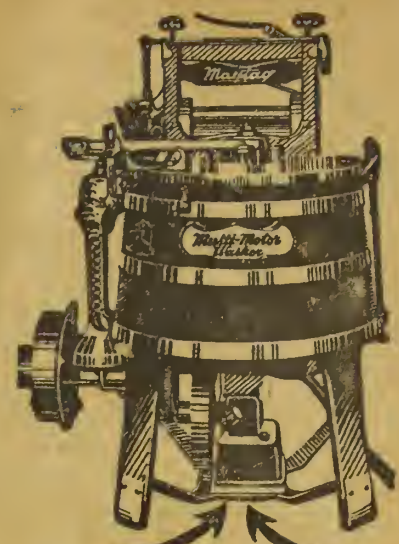
And suddenly there was with the angel a multitude of the heavenly host praising God, and saying, "Glory to God in the highest, and on earth peace, good will toward men."

And it came to pass, as the angels were gone away from them into heaven, the shepherds said one to another, Let us now go even unto Bethlehem and see this thing which is come to pass, which the Lord hath made known unto us. And they came with haste and found Mary and Joseph and the babe lying in a manger.

And when they had seen it, they made known abroad the saying which was told them concerning this child. And all they that heard it wondered at those things which were told them by the shepherds.

But Mary kept all these things and pondered them in her heart.

And the shepherds returned, glorifying and praising God for all the things that they had heard and seen, as it was told unto them.



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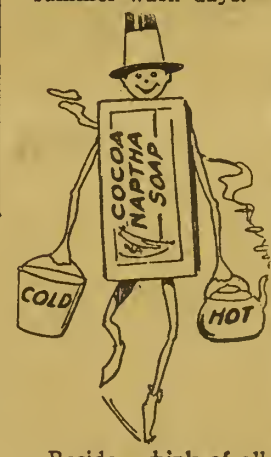

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Jack and Jill ploughed up a hill
And soaked it well with water,
Then planted peas and beans and corn
And carrots as they "ougnter."
—A. D. D.

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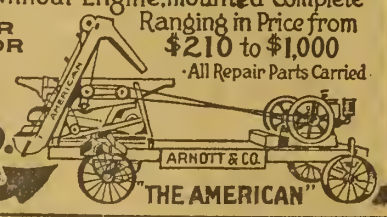

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IN CALIFORNIA

by Ernest Braunton

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Cultivator Pub. Co., 115 No. Broadway Los Angeles, Cal.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Cocoanut Balls

Melt some of the fondant in a cup by placing it in a pan of hot water. When melted stir in grated cocoanut, using one-half cup of the cocoanut to a cup of fondant. Form into balls and roll in white of egg and then into some grated cocoanut until entirely covered. If liked the fondant can be colored pink, which makes a nice combination with the white cocoanut.

Cream Nut Bars

Melt some of the fondant and pour into a greased pan. Melt some more fondant and stir into it one-half cup of chopped nut meats, and pour over the fondant already in the pan. Now make some chocolate fondant, which is made like the other only a square of grated chocolate is added to the other ingredients. Stir until creamy, and while still soft pour over the nut layer in the pan. When cool cut into squares, and you will have a delicious candy as well as a pretty looking candy.

Lemon Creams

Melt a half cup of fondant in a cup and add the grated rind of one-half lemon, and one-fourth cup of candied lemon peel. Color with a few drops of yellow. Stir until stiff, and then form into fancy bon-bon shapes. Place on paraffine paper to cool.

Popcorn Fudge

Pop some corn and pick out the nicest grains and pass through a food chopper. Place in a saucepan two cups of granulated sugar, one-half cup of water, and a fourth teaspoonful cream-of-tartar. Boil until it spins a thread or to hard ball stage, then flavor with vanilla, and stir in one cup of the popcorn. Pour this over the stiffly beaten whites of two eggs and beat up until light and foamy, and then pour into a pan. When cool cut into squares. This is still better if a half cup of nutmeats are also added.

Stuffed Prunes

Soak some large prunes in water over night, after washing them thoroughly. In the morning dry off, and make a slit in side of each and remove seed. Stuff with fondant in which nutmeats have been stirred. Roll in powdered sugar, or dip in melted fondant.

Nut Taffy

Take two cups of brown sugar, one-half cup of water, and two tablespoons of vinegar, and a tablespoon of butter. Boil to the "crack" stage, then turn the mixture into a greased pan. Place a half cup of nut meats in the center, fold over the edges, and then pull like you would any other taffy.

CHICKEN PIE

Dress, clean and cut up two fowls or chickens. Put a kettle on range with three pints of water; as soon as water reaches the boiling point, add chicken, a few pieces at a time, otherwise the boiling will be stopped, and the water thus cooled will draw out so much of the flavor that the chicken will become tasteless. When all is added, cover and cook slowly until meat is tender, adding one half tablespoon of salt during the last half-hour of the cooking. Remove chicken and discard skin and some of the larger bones. Strain stock, skim off fat and then cook until reduced to four cups. Thicken with one-fouth of a cup of butter mixed with one-third of a cup of flour. Season with salt and pepper. Arrange chicken in serving dish, strain over gravy, let stand over night and reheat for serving. Make a decorated cover of a rich piecrust. It is much better to bake the paste separately and reheat before covering the pie.

LET THE CHILDREN MAKE CHRISTMAS

If there is to be a Christmas tree, let the children prepare the decorations; let them make cooky stars, polish apples, string cranberries and corn, and decorate the rooms. Christmas time that means constant shutting of doors in the faces of the children because grown-ups are busy in preparation for a grand surprise for these same children on Christmas day, is not nearly so happy a time as when the children themselves make Christmas. The old, old proverb, "It is more blessed to give than to receive," is always true, because it always work out just that way.

Don't think the small folks can not keep a secret; they can and do keep surprises as well as do the older folks. Let them have a share in the buying, and in all the delightful mysteries of the season. Christmas time should be a happy time—a time to which the children can look back as days of pure joy.

DIXIE PUDDING

One cup dried bread crumbs, one-half cup flour, one-half cup chopped beef suet, one-half cup molasses, one egg, one-half teaspoon cinnamon, one cup raisins, four teaspoons each cloves, mace and nutmeg, one cup grated sweet potato, one-half teaspoon salt, one-cup milk, one scant teaspoon soda.

Chop the suet fine; seed the raisins; peel and grate the sweet potato. Place all these ingredients in a mixing bowl; add to them the bread crumbs, also the flour, spices and salt sifted together. Next beat the egg lightly, white and yolk together, and add these with the molasses to the dry ingredients. Dissolve the soda in the milk and use to moisten the pudding. Stir and beat all well together; then turn into a greased mold and steam for three hours. Serve with either hard or liquid sauce.

ENGLISH PLUM PUDDING

One pound of beef suet, one pound of currants, one pound of Sultana raisins, one pound of mixed peel (lemon, orange and citron), one pound of flour, two ounces of sweet almonds (chopped fine), one-half teaspoon of mixed spice, one-half a nutmeg, one pound of sugar, one small teaspoon of salt, the rind and juice of two lemons, three soda crackers rolled fine, six eggs and one-fourth of a teaspoon of syrup. Thoroughly mix when dry, then wet with egg and syrup, and water enough to make very stiff, then let stand over night. In the morning put in bowls, and cover with cloths, then put in a kettle of boiling water. Boil it for eight hours. When wanted for use, boil again or steam until thoroughly heated through. Serve with either hard or soft sauce or cream. As I own a large steamer, I usually steam my pudding instead of boiling it, and I like it better that way.

THINKING

Written for California Cultivator
By Ida May Blake

I'm thinking of a land I know
As Christmas time draws near.
It is a land of pines and snow,
And fraught with memories dear.

I'm thinking of a village there,
Among those snowy hills,
Of frosty windows, clear, crisp air,
And pretty icy rills.

I'm thinking of the winter nights,
Of moonlight sleighrides too.
Of starry skies, of northern lights
And happy hours with you.

I'm thinking of another clime,
A land quite far away,
Where Christmas comes in summertime,
And roses bloom each day.

I'm thinking of this Southern land,
Of Baldy's snow-capped peak,
Of oceans blue, of sparkling sand
Where all may pleasure seek.

I'm thinking of the Christmas flowers,
Poinsettia's scarlet star,
And may I think and count the hours
To bring you where they are?

BETTER LUCK 'NEXT TIME

On Christmas Day I et an' et,
An' then about midnight I set
Straight up in bed an' give a yell
That brung dad out so fast he fell
Flat on the floor—a dandy fall,
But I jus' couldn't laugh at all!
All I could do was grab my shirt
Above the place where something hurt.

It might have been the punkin pie—
Or mince or cider. Wonder why
A feller's built to swaller stuff
When he's already had enough?
It seems to me in such a case
That something ought to close his face.
This stomach ache is pretty tough—
How could I know I'd had enough?

An' now vacation goes ahead,
Doggone it! with me here in bed;
An' 'twas Dick Feeney's sled that bore
The girl today that lives next door
To candy pull an' apple bake!
'Bout all I got was stomach ache
On Christmas. "But you bet next year
I'll have some fun—or pretty near!

A CHRISTMAS SONG

By Florence Evelyn Pratt

Oh, Christmas is a jolly time
When forests hang with snow,
And other forests bend with toys
And lordly Yule-logs glow.
And Christmas is a solemn time,
Because, beneath the star,
The first great Christmas Gift was given
To all men near and far.
But not alone at Christmas-time
Comes holiday and cheer,
For one who loves a little child
Hath Christmas all the year.

Thomas submitted. It seemed to him he had never been so warm. He felt his shirtwaist front, his collar band, his sleeves. Then with a defiant hand he reached around and unfastened his overalls.

"Don't care if I do get paint on me," he grumbled. "I'm going to pull the old things off."

He slid the overalls down over his feet, exhaling a luxuriant breath of bliss.

"Zowie! That feels good!" He leaned against the fence, gazing idly up the street.

Suddenly his apathetic gaze tightened into recognition. A figure was coming towards him along the sidewalk—his father, two hours and a half ahead of time.

"Whoo-oof! Jimini crickets!" Tom threw a glance at the fence. Then, "Turp!" he hissed. "Tur-rp!" This was tragedy. Their beautiful surprise was all squashed in the head!

"Turp!" again. Tom made for the gate, started on a dead run for the house. In his haste he neglected to look before he leaped. Turpin's bucket of paint stood immediately in his path and over it Tom stumbled and fell. Grain paint flew up in a glory of spatter over the cement walk, green paint spouted and splashed in full baptism over all the pansies in Father Bird's favorite pansy bed.

Before Tom could rise from the ruins his father was upon him, evidencing, by the speed with which he reached his son, the truth of the statements as to the supremacy of mind over matter, that a back is a mere nothing where larger issues are concerned.

Father Bird clutched his son.

"You young rascal!" he exploded. "What do you mean? Is there any devilment on the face of this earth you boys don't think of? I say what do you mean?" All those further things which Father Bird longed to say but was forbidden by his position as Sunday school superintendent, seethed in his eyes.

Thomas tore himself loose. His blue eyes were two flames. Usually a mild, nice little boy, he became before his father's eyes a savage young demon.

"What—what do you mean?" he choked. "What do you mean yourself, catching hold of a fellow an'—" Helplessly Thomas struggled for appropriate thunderings and fled.

Father Bird put his hand to his back and gazed at the fence, at the walk, at the pansy bed where each little pansy lifted a piteous, green-freckled face. Then he went out to the walk and creakingly picked up the overalls. Then he hobbled into the house.

Mother Bird started up from the bed where she had been trying to take a nap.

"Why, Sam, what you doing home?" she inquired. "Is your back worse?"

He began sputtering explanation but Mother Bird interrupted him in the heart of his first sentence.

"The white paint?" She sat up on the side of the bed. "You were going to paint it white again, Sam, after all that trouble we had that time before? I particularly told them the green! They were doing it to surprise you," she added.

"To—what?" Rage still choked him.

"To surprise you because you had the lumbago. Been out there nearly two hours, working like anything! It's an awfully hot day."

"Do you mean to tell me, Nell—do you expect me to believe that those young——"

"It is too bad about your pansies," Mother Bird went to the mirror and took down her pretty gray hair. "That was an accident, though, of course."

"Suppose the overalls were an accident, too," Father Bird remarked dryly.

He sat there for a while then rose with a sheepish smile.

"Well—it's up to me to apologize!" he confessed. "But you'll have to admit, Nell, that judging from the past I could hardly have been prepared for such consideration on the part of my sons! Where do you reckon they've gone?"

"Oh, I don't know—they won't come back till supper time now." Mother Bird stuck in her final hairpin. "They'll stay clear of here. You see, they're trying to get into the Boy Scouts," she added answering his defense.

The twins did "stay clear" until six o'clock. Then they came fooling slowly up the walk and lounged on to the front porch.

Father Bird was reading in the parlor. When he saw them he put down his paper and stole to the screen door where he stood out of eye range and listened.

"You might just's well take what's coming to you!" Turpin was advising in a hard undertone. "You'll get yours. Serves us good and right for trying to be kind."

"Going to paint the old fence white?" Tom's voice now. "I call that punk! Wait'll the first rain comes along an' then where'll it be?—Look a heap better green!"

Father Bird opened the door and stepped out.

"I don't know but what I agree with you, son."

"Sir?" Tom arose and ostentatiously turned himself fatherward.

It is rarely that a boy of any age, be he eight or eighty, apologizes by word of mouth. If there is speech, it is of the roundabout sort, couched in such manner as not to involve the speaker in any accusation of sentimentality. Generally male creatures act on the principle that actions are louder than words. Always they understand each other.

Father Bird drew two shining new quarters from his pocket, jingling them.

"I don't know but green does look better," he went on. "More the color of the grass and the trees. When you fellows get it smoothed up a bit—a second coat—know anybody you think could find any use for these?" He proffered the quarters.

The boys, after a second's hesitation, took them but the silence that hung in the air was not that of complete satisfaction. Dad had done pretty well but—a second coat!

Father Bird somehow sensed the strain. He added a last off-hand sentence.

"And when the job's all done," said Father. "You—I reckon we'll have to see what we can do about the Scout memberships. I've been thinking quite a long time that there isn't anything much better for a fellow than being a Scout. Makes him brave, y' know, teaches him a lot of practical things and that business of doing a kind deed each day—well, that's the right kind of stuff."

The boys gave a whoop then. The cloud of depression lifted for good—a world of sunshine flooded their souls. Father had squared himself. Father was all right. They raced for the front gate and charged down the street.

Mother Bird saw them from the diningroom window. She knew what that meant—candy, ice cream cones, chewing gum, pickles, peanuts, ginger ale—no appetite for supper. But she held her peace.

"Little scamps!" she murmured affectionately. "My—that fence they painted surely does look an awful sight, though!"—Farmers Wife.

SWEETMEATS MADE AT HOME

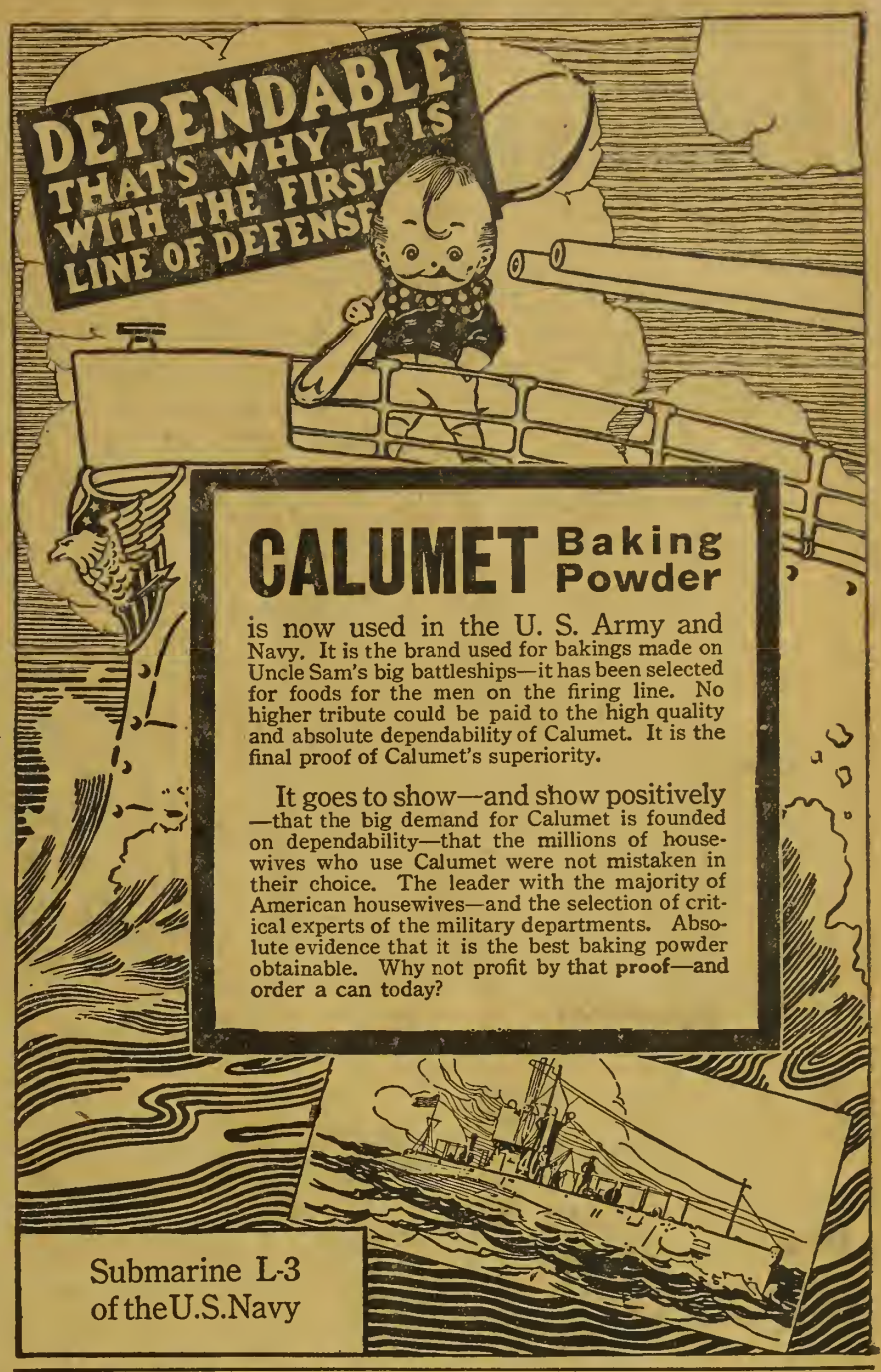
Our full sugar bowls are a Christmas present indeed. We are going to enjoy our Christmas candies as we never did before, especially our home made ones.

Fondant

Anyone who has learned to make fondant can make all sorts of delicious bonbons, but there are many other delicious candies made without using fondant.

To make the fondant take two cups of granulated sugar and place in a saucepan with one-half cup of water and one-fourth teaspoon cream-of-tartar. Boil until it will form a soft ball when dropped into cold water. Flavor with vanilla, and pour out on a platter. When partly cool stir with a spoon until it becomes creamy. As soon as it can be taken up into the hands knead until smooth. A half teaspoon of glycerine will help to make it smooth and easily worked.

When the syrup is boiling, if crystals should form around the edge of the pan remove with a damp cloth without shaking the pan. This fondant can be divided into different portions, and each portion colored with a different color with fruit or vegetable colorings. Fondant is nice used with nuts, candied fruits, or dried fruits such as raisins, dates, figs and prunes. Chocolate creams are made by molding the fondant in small cone shapes, and then dipping into melted chocolate.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Los Angeles Market

Los Angeles, Dec. 18, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.

Cal. Extra Creamery 62

Dec.	11	12	13	14	16	17
'18 ...	61	61	61	61	62	62

CHEESE

Brokers' prices:
California fresh, lb. 32½

EGGS

Exchange quotations. Price to retailers 2 to 3 cents higher.

Fresh extras 70
Case Count 67
Pullets 65

Dec.	11	12	13	14	16	17
'18 ...	75	74	70	70	70	70

POULTRY

Hens; heavy, 31; light, 28; colored, 32; broilers, 27-31; friers, 33; roasters, 30; old cocks, 20.

Ducks, 25; ducklings, 28-30; geese, 28; turkeys, 30-34; squabs, 40-43; Belgian hares, 20.

LIVESTOCK

The demand for good steers is improving—this week's early market showing a 50 cent improvement. Common steers are bad property owing to the fact that the retailer will take good cows in preference to poor steers.

The supply of common cows is falling off and the market could handle more on account of the cannery facilities.

The demand for hogs of desirable weights and finish continues strong. The early part of the week saw the market sprung above the opening range of prices.

The supplies are coming in in about the volume best handled by the market. No surplus has been accumulated. Prospects for satisfactory markets continue good and all familiar with the situation feel that producers need have no fear of a serious break. The Eastern markets are staggering under unprecedented shipments of light unfinished pigs and at the present time an embargo is in operation against Chicago.

The market is weak on lambs, Los Angeles demand calling for light weights. The quality of recent shipments is below the standard. Wethers are naturally scarce, and the market remains firm. Ewes are exceedingly draggy.

Report of live stock conditions on the Los Angeles market as compiled by the United States Department of Agriculture, Bureau of Markets, through the local office:

Good Steers .....12.50@13.50
Medium Steers .....11.00@12.00
Common .....9.50@10.50
Good Cows .....9.50@10.50
Medium Cows .....8.00@9.00
Common and canners .....5.50@6.00

Prices quoted below are for carload shipments. Driven-in, or truck hogs sell for ½ cent less:

Hogs—
No. 1 hogs, 150-200 lbs. .....16.50@17.00
No. 2 hogs, 250-350 lbs. .....16.00@16.25
Sheep—
Lambs, 65-80 lbs. .....14.50@15.00
Wethers .....11.00@12.00
Ewes .....8.00@10.00

POTATOES

Wholesale selling prices:

Burbanks .....2.25@2.65
Sweet, lug .....70@75
Idaho Russets 2.25

ONIONS

Wholesale selling price, cwt.

Australian Brown, lug .....1.65@1.90
White Globe, cwt. .....3.50@3.75

VEGETABLES

Wholesale prices:

Beans—String .....10@11
Limas, lb. .....8@9
Cabbage, cr. .....90@1.00
Carrots, doz. 40
Cauliflower, cabbage cr. .....2.75@3.00
Celery, cr. .....3.00@3.65
Lettuce, cabbage cr. .....1.25@1.40
Parsley, doz. 15½
Peas .....12½@13
Peppers, Chili, lb., ...13@15
Pumpkins, lb. best .....1@1½
Radishes .....15@20
Rhubarb, bx., Crimson .....65@75
Strawberry 1.25
Spinach, doz. 30
Squash—Hubbard, best, lb. 2
Tomatoes, unwrapped, ripe lug...75@1.50
Turnips, doz. 30

FRUITS

Apples—Bellfleurs, bx. .....1.75@2.00
Yucaipa Delicious .....2.75@3.25
Pearmains .....1.75@1.85
Newtons .....1.75@1.85
Cranberries Ore., 1-3 bbl. bx....7.00@7.50 loose, 2.25@3.00.
Pears—Bartletts, storage lb., 8; D'Anjou lb., 7@8; Kiefer, lb., 5; Winter Nellis, lb., 6@7.
Persimmons, lb. .....5@10

CITRUS

Lemons: Fy. packed 4.00@4.50 bx.; loose, 2.25@3.00.

Oranges—Tulare County Navels large size, 3.00@4.00; medium size, 5.00@6.00; Southern Navels medium to small size, 5.00@6.00; loose, 3.00@3.25 bx.; Valencias, medium size packed, 4.00 bx.; Tangerines and Mandarins, 8@10½ lb.

Grapefruit: Tulare County Seedless, large fy., 2.75@3.25, medium 3.50 bx.; Arizona, Seedless, 3.50@4.00 packed bx.; 2.25@2.35 half bx.

HONEY

Cash to producer on farm:

Supplies very light, very few sales. Extracted, lb.: White, supplies practically exhausted, too few sales to establish a market; Light Amber, Sage and Alfalfa 21½@22 lb.; Beeswax, 36@37 lb.

BEANS

Price to retailer, cwt.:

Pinks .....7.50@8.00
Tepary 5.00
Lima 11.50
Large White 10.00
Small White .....10.25@11.00
Blackeyes 6.25
Garbanzos 11.00
Lentils 25.00
Kidney 12.00
Cranberries 11.25
Pintos 7.25

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

No. 1 Tame Oat .....26.00@28.00
No. 2 Tame Oat .....23.00@25.00
No. 1 Barley 22.00
No. 2 Barley .....19.00@21.00
No. 1 Alfalfa 20.00
No. 2 Alfalfa .....17.00@19.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEED STUFFS

Prices offered on exchange. For federal price see San Francisco market:

Tex. No. 2 recleaned Oats.....3.25
No. 1 Bright Feed Barley ....2.25@2.31¼
No. 3 Yellow Corn, bulk .....3.15@3.25
No. 3 White Corn, bulk 3.20
No. 3 Mixed Corn, bulk 3.20
Milo Maize, local .....2.45@2.46½
Alfalfa Molasses, ton 35.00
Alfalfa Meal, ton 34.00

San Francisco Markets

San Francisco, Dec. 17, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapped, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:

Extras 64

Dec.	10	11	12	13	14	16
'18 ...	63	63	63	63	63	64
'17 ...	45	45	45	45	45	..

Rcts. wk. ending Dec. 16, 307,000 lbs.

CHEESE

Dairy Exchange quotations:

Cal. Flats 35
Ore. Triplets 38
Jack, full cream 30

EGGS

Dairy Exchange quotations:

Extras 77½
Extra Pullets 75

Dec.	10	11	12	13	14	16
'18 ...	82½	82	81½	76½	76½	77½
'17 ...	49	51	50½	52½	52	..

Rcts. wk. ending Dec. 16, 5957 cases.

POULTRY

We quote to producers, lh.:

Hens, 33; broilers, 43@45; fryers, 33@37; old roosters, 21@22; young roosters, 33.
Ducks, 30; geese, 30.
Belgian hares, live, 20@22.
Jack Rabbits, doz. 3.25@3.75.
Squabs, doz., 3.00@4.00.
Turkeys, dr., 42@43; live, 35@38.

LIVESTOCK

Prices gross weight:

Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.

Steers, lb., 11@13; thin, 9½@10; cows and heifers, 8@9½; thin, 6@6½; calves, 10½@11½.

Sheep — Lb. gross weight: Wethers, 11½@12; ewes, 9@9¼; lambs, yearlings, 12@12½; milk, 14@14½.

Hogs—Hard grain fed, weighing 100 to 150 lbs., 16; 150 to 300 lbs., 16½; 300 to 400 lbs., 15¾.

POTATOES

Wholesale selling prices at wharf, cwt.:

Choice deltas, 1.50@1.75; fy., 1.75@2.00; Red Shlma, 2.30; Oregon Burbanks, 1.85@2.25; Gems, 1.85@2.35; British Queens, 1.75@1.90; sweet, lb., 2½@4.

ONIONS

Wholesale selling price on wharf, cwt.:

Australian, Brown and Yellow, 1.15@1.35.

VEGETABLES

Wholesale selling price:

Artichokes, doz. .....35@1.25
Beans, String, lb., 12½@15; Limas..8@19
Wax .....7@12½
Beets .....1.00@1.50
Brussels Sprouts, lb. .....5@6
Cabbage, lb .....¾
Carrots, sk. .....1.00@1.25
Cauliflower, doz. .....75@1.00
Celery, doz. .....30@50
Cucumbers, hothose, bx. of 30...2.50@3.00
L. A., lug .....2.50@3.25
Egg Plant, lb. .....5@7
Lettuce, doz. .....20@40
Southern Iced, cr. .....1.75@2.00
Egg Plant, lb. .....5@10
Peppers, Chili, lb. .....7@10
Mushroom, wild .....10@25
Peas .....14@15
Pumpkins, sk. .....1.00@1.25
Spinach, lb. .....3@4½
Rhubarb, bx. .....1.25@1.75
Squash—Cream .....85@1.15
Hubbard, sk. .....1.25@1.75
Marrowfat .....1.25@1.50
Tomatoes, lug .....50@1.00
Turnips, sk. .....75@1.25

FRESH FRUITS

Apples—Newton Pippins .....1.35@1.75
Pearmain .....1.25@1.65
Spitzenburg .....2.00@3.00
Avocados, doz. .....6.00@7.00
Bananas, lb. .....8@9
Grapes, cr. .....1.35@2.25
Olives, lb. .....10@12½
Pears—Beurre Hardy 1.50
Kieffer, ½ bx. .....1.50@1.75
Winter Nellis .....2.25@2.75
Persimmons, bx. .....1.00@1.50
Strawberries, chest .....14.00@1500

CITRUS

Box: Lemons, 3.50@4.50; lemonettes, 2.50@3.00; grapefruit, 2.00@3.00; limes, 1.25@1.50; Mandarins, 1.30@1.75; cr., 1.75@2.00; tangerines, bx., 1.25@1.50; half orange bx., 2.50@3.00; new Navel, 3.00@6.00.

DRIED FRUITS AND RAISINS

Prunes — Bulb basis: 30-40s, 10; 40-50s, 9½; 70-80s, 8½; 80-90s, 8; 90-100s, 8; in 25-lb. boxes, 20-30s, 18½; in 50-lb. boxes, 100-120s, 5¾; 120s up, 5¾.

Peaches — Bulk basis: Standard yellows, 11¼; ch., 11¾; fy., 12½; extra fy., 13¼; slabs, 10¼; standard Muirs, 11¾; ch., 11⅞; fy., 12⅞; extra fy., 14; slabs, 10¼.

Raisins—Muscats, pkge. seeded: fy., 36 16s. 9⅝; fy., 54 12s, 7¾; ch., 36 10s, 9¼; ch., 45 12s, 7¾. Bulk seeded, in 25-lb. boxes: Bakers, 8; loose, in 25-lb boxes, recleaned and floated, 1-cr., 8⅛; 2-cr., 7½; 3-cr., 8; 4-cr., 8¾; layers, ordinary pack, 20-lb. boxes, 3-cr., 1.85; 4-cr., 2.10; 6-cr., 2.95; 10-lb. boxes, 3-cr., 1.05; 4-cr., 1.20; 6-cr., 1.65; 5-lb. boxes, 3-cr., 65; 4-cr., 70; 6-cr., 90; vineyard run layer raisins, 50 lbs., 3.00; 100 lbs., 7.50.

Figs—Bulk basis: White Adriatic, extra fy., 17½; fy., 15¾.. ch., 14; Calimyrna, extra fy., 25; fy., 23½; packages, ch. to fy.. 12 10s, 1.75@1.80; 24 8s., 2.90@2.95; 50 6s, 4.30@4.40; 70 4s, 4.40@4.50.

Pears—Bulk basis: Fy., 19½; extra ch. 17; ch., 15½; standard, 12@14.

Apples—Lb.: Extra ch. to the evaporater, 13½; jobbing price, 14½.

Apricots—Standards, 9½; ch., 13; extra ch., 14½; fy., 16; extra, 17½; Moorparks, 19; slabs, 11.

RICE

Prices which rice millers of this state have voluntarily agreed with the food administration for California to pay to growers for paddy rice are as follows:

No. 1 and No. 2 Japan, in sacks, $4.32 per 100 pounds.

No. 3 and No. 4 Japan, in sacks, $4.16 per 100 pounds.

Prices for other grades will be paid for on a basic value proportionate, and no higher prices than those quoted above for any grades whatever will be paid.

The millers agree further to sell cleaned rice and by-products for prices not to exceed the following:

Fancy Japan, 1½c per pound.
Choice Japan, 7⅜c per pound.
Fancy second heads, 6⅞c per pound.
Screenings, 5⅝c per pound.
Brewers', 5¼c per pound.
Rice polish, $50 per ton, carlots.
Rice bran, $36 per ton, carlots.

NUTS

The Almond Growers' Association has established opening prices as follows per pound:

Nonp. 27½
I.X.L. 25½
Ne Plus 24½
Drake 20

Outside dealers have named prices above these quotations and it is understood association stock is practically closed out and prices withdrawn.

Walnuts: Net prices have been named by the California Walnut Growers Association:

No. 1 Softshell 28
No. 2 Softshell 25
Jumbo 30
Fancy Budded 31½
Golden Gate Budded 29

Franquettes, Eurekas and other fancy varieties sold on sample. No. 1 Softshell guaranteed 88 per cent good; Fancy Budded, 90 per cent. In case of worms or damage by ants not more than five per cent.

HONEY

Cash to producers, country loading points:

Extracted, Water White, supplies very light, 22@23½; White Sage, supplies very light, 20@23; Light Amber, supplies very light, 18@20½; Dark Amber, 18@19 lb.; Beeswax, supplies moderate, 35@40 lb.

GRAIN

Wheat—Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per Bushel	Per Cental
No. 1	$2.20	$3.62 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	$2.18	$3.63 1-3
No. 2	2.15	3.58½
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	$2.16	$3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 ½

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.

Barley — Feed, 2.17½@2.22½ per cental for choice spot; shipping, 2.25-2.27½; milling, nominal.

Oats—Red feed, 2.35@2.55 per cental; seed, do, 2.85@3.00, white recleaned at 3.15@3.20.

Corn — Egyptian, 2.75@3.00 per cental for choice white; Milo, 2.65@2.70. Rye nominal.

HAY

Uunder date of December 14, Scott, Magner & Miller says:

Receipts past week 816 tons. All lines of the trade have been suffering from very low figures on both the badly and partially damaged hay and as a result the demand for sound hay and alfalfa has been materially reduced. This weather-damaged hay, however, will soon be entirely cleaned up and the market will probably then take on a stronger tone as warehoused hay will then come into demand. Interior trade is also dull but as stocks of hay are reported low, some activity may be expected shortly. Local arrivals during the week have moved off slowly, consumers showing an inclination to refrain from buying any quantity till after the holidays.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.

Fancy Wheat Hay (light 5 wire bales)	27.00@29.00
No. 1 Wheat or Wheat and Oat Hay	25.00@27.00
No. 2 Wheat or Wheat and Oat Hay	19.00@23.00
Choice Tame Oat Hay	24.00@26.50
Other Tame Oat Hay	19.00@22.00
Wild Oat Hay	19.00@21.00
Barley Hay	19.00@21.00
Alfalfa	17.00@21.00
Stock Hay (in order)	17.00@20.00
No. 1 Barley Straw, bale	.50@80

Damaged hay (all kinds), according to condition.

SEEDS

Flax	8@8½
Millet	5@5½
Rape	2½@5

Citrus Fruit Market

Los Angeles, Dec. 18, 1918.

A better general tone prevails and Navels are being well received in practically all markets.

Lemon prices are not spectacular but good demand and fair price takes up every offering.

Shipments

Shipments of citrus fruits to date since November 1, 1918: Southern California; oranges 674 cars, lemons 881, total 1555. To same date last season; oranges 1998, lemons 433, total 2431. Central California this season; oranges 2407, lemons 198 total 2607. Last season to same date; oranges 1471, lemons 50, total 1521. Northern California; oranges 174, last year same date, 159.

AT THE AUCTIONS

December 11

New York: 3 oranges, 3 lem. Nav. 5.20-6.20, Val. 4.35-10.15, lem. 2.85-4.20.

Boston: 6 cars. Nav. 3.65-5.70, lem. 2.70-4.30.

St. Louis: 3 cars. Nav. 4.85-5.40, lem. 4.35-4.55.

December 12

New York: 6 cars. Nav. 4.85-7.05, lem. 2.60-4.05.

December 13

New York: 12 oranges, 4 lemons. Higher on Nav. 4.30-7.55, Val. 4.85-9.65, lem. 2.55-4.35.

St. Louis: 4 cars. Nav. 3.00-5.30, lem. 4.70.

Boston: 5 cars. Nav. 4.55-5.25, lem, 3.30-4.00.

Cleveland: 5 cars. Higher. Nav. 3.15-5.35, lem. 3.00-4.35.

Cincinnati: 1 car lem. 1.25-4.80.

Philadelphia: 2 cars. Nav. 4.80-5.15, lem. 4.70-5.10.

December 16

New York: 19 cars, 5 lem. Market stronger. Nav. 3.85-6.80, Val. 4.45-6.50, lem. 2.35-4.30.

Cleveland: 5 cars. Nav. 4.80-5.85, lem.

Boston: 9 cars. Nav. 4.20-6.65, lem. 3.75-4.20.
3.40-5.20.

St. Louis: 5 cars. Nav. 3.95-5.70.

December 17

New York: 11 oranges, 4 lem. Nav. 3.75-7.00, Val. 4.70-9.20, lem. 2.55-4.15.

Boston: 5 cars. Nav. 4.90-5.55, lem. 3.75-4.15.

St. Louis: 6 cars. Nav. 2.90-4.40.

MARKET NOTES

Wisconsin cheese markets show a total reduction in stocks of 504,000 pounds during the past week. The reduction the previous week was in excess of 1,000,000 pounds.

Canadian potatoes are selling at various markets around $1.40 and $1.67.

Florida winter cabbage reports total acreage this year of 2429 as against 5950 last year. Decreased acreage this year caused by low prices and increased cost of production.

The war department recently purchased 11,000,000 pounds Pintos at seven cents f. o. b. shipping point, sacked recleaned. Total government bean purchases up to December 10 aggregated 70,000,000 pounds.

Florida string bean output has been materially lessened by heavy rains.

The bureau of markets of California reports Watsonville Bellflowers, fancies, large 1.75-1.85, while medium size is selling for 1.35@2.00.

PARTIAL LIST CALIFORNIA FRUIT AND VEGETABLE SHIPMENTS

From post card reports to the Los Angeles branch of the bureau of markets, report is made of the following shipment of cars of products from California for the week ending December 16: Apples, 153; cabbage, 9; cauliflower, 22; casabas, 44; celery, 84; dried apples, 1; dried apricots, 7; dried beans, 89; dried figs, 4; dried peaches, 17; dried peas, 1; dried peppers, 10; dried prunes, 27; grapes, 8; lettuce, 79; mixed vegetables, 91; mixed fruit and vegetables, 16; mixed dried fruit, 37; olives, 7; onions, 38; peppers, 3; potatoes, 106; pumpkins, 1; raisins, 286; squash, 1; sweet potatoes, 33; tomatoes, 3.

CEREAL EXPORTS PLEDGED TO ALLIES

Under the agreement of the United States food administration with the food controllers of the Allied nations, our breadstuffs export program for the coming year will aggregate 409,320,000 bushels, which is equivalent to more than 60 bushels for every farm in the United States.

The program calls principally for wheat, but from 100,000,000 to 165,000,000 bushels may he other cereals, including rye, barley and corn.

MILKING MACHINES SAVE LABOR

It may be that the dairyman, while labor is scarce, will have to rely on the milking machine. Milking machines have been on the market more than 25 years, but most of them have not been successful. Machines are now on the market that are past the experimental stage and are giving the best of satisfaction in the hands of many users, although others soon discard them. The successful use by the many shows that the machine is all right when properly used. The milking machine saves a great deal of hand lahor, making it possible for one man to milk 25 to 30 cows in an hour, although extra time is required for cleaning the machine. The machine does not injure the cow in any way and animals prefer machine to hand milking. It is a question whether the cows milked with a machine hold up in milk toward the end of the milking period quite as well as when hand milked. It is possible that the yield for the year may be a little less. Apparently, the machine will do better work than poor hand milkers, but it is not quite equal to skilled hand milkers.

When the machine is properly handled the quality of the milk with reference to its sanitary condition is better than when hand drawn. If the machine is not properly cleaned, then the milk is not in as good condition as that drawn by hand.

C. H. Eckles of the University of Missouri College of Agriculture suggests that a farmer who expects to purchase a machine will do well, first of all, to visit some one using a machine of the kind he is considering, and see it in operation so that he may decide for himself whether he wants it. In buying a milking machine use the same common sense that would guide the buying of any machinery. It is safer to get a make that has been in use for some time, preferably three years at least, in order that defects may have been corrected.

It is doubtful whether a milking machine is practical for fewer than 30 cows. The cost of an outfit for this many cows will vary from $150 to about $450.

MORE MILL FEEDS IN PROSPECT

With the return of all-wheat bread to American tables following the relaxation of substitute regulations, we may expect a somewhat increased supply of mill feeds. The amount will be further enlarged by the recently increased purchases of flour by the Food Administration Grain Corporation for export. Export of flour rather than wheat is now possible because of increased ocean tonnage available since the signing of the armistice.

A third factor which is expected to increase supplies of mill feeds is the cancellation of the so-called "milling extraction rule," which, as a war time measure, diverted into flour a considerable proportion of the wheat berry ordinarily used for feed.

All of these developments combined are expected to increase the mill feed output fully a fifth, and this extra feed should be available about the end of December. In presenting these facts the food administration warns against excessive optimism over the situation, since there will be a continued shortage of mill feed compared with pre-war years. The price of these feeds is being maintained by regulation at an artificially low level which obviously stimulates an abnormal demand.

Briefly, more mill feeds are in prospect and they will be available about the Christmas holidays, but the supply will he short of demand and continued conservation is necessary.

KILL THE VARMINTS

The department of agriculture is urging reduction in the number of coyotes, wild cats, mountain lions and other predators which live on the young of our live stock. The department reports that during last May a Wyoming stockman lost 100 head of sheep and seven colts, while his neighhor lost 50 sheep which were killed by two male wolves. A biological survey hunter took the trail after the marauders and followed the pair until he was able finally to kill them. Another bureau trapper accounted for a pair of marauding wolves near Mosquito Lake, Wyoming, which were credited with killing $4000 worth of live stock a year. A third government hunter recently killed a pair of old wolves which destroyed about $3500 worth of farm stock a season. In the same locality an old white wolf which killed 30 head of cattle last spring also fell victim to the trapping skill of one of Uncle Sam's hunters. But in addition to this work of the department trappers, those living next the mountains may add materially and may occasionally secure a bounty by doing some trapping or hunting.

VALUE OF 100 POUNDS OF MILK

From 100 pounds of skim milk 15 pounds of cottage cheese may be made, with a protein value equal to 22.5 pounds of pork. In other words, a quart of skim milk makes more than a third of a pound of cottage cheese. When a hundred pounds of skim milk is fed to a pig the skim milk is converted into about 4.8 pounds of dressed pork, when combined with other feeds to the best advantage. For every hundred pounds of skim milk fed to pigs instead of used for human food in the form of cottage cheese, there is a food loss equivalent to the protein in 17.7 pounds of meat. That is not all; after the manufacture of cottage cheese, the whey remains and is available for stock feed. From 100 pounds of skim milk made into cottage cheese there is a residue of about 80 pounds of whey, which is regarded as having a feeding value of about half that of skim milk, and on that basis, when properly combined with other feeds, will produce 1.9 pounds of pork. So, by making cottage cheese and feeding the whey to pigs, the human food production from 100 pounds of skim milk has the same protein value as 24.4 pounds of meat, or 19.6 pounds more than when all the skim milk is fed to pigs.

Accounts continue to mount up of the pitiable condition of British and other allied prisoners making their way back from German prisons.

General March announces that a million and a half men will be retained by General Pershing in Europe, the rest being returned to the United States as soon as possible.

WAR DIET AND HUMAN WEIGHT

A statistical report published in the German press and dealing with the effect of war food on the human constitution shows briefly that farmers and their families lost no weight during the war, but that persons living in large cities were affected to a serious degree.

According to Bavarian doctors the average person in cities lost about one-sixth his pre-war weight, but in small towns the loss has heen only about one-twentieth.

"Self providers," as farmers are called, lost no weight during the war, and this ohservation applies to hoth men and women. Among city consumers, however, men lost ahout one-tenth their pre-war weight and women ahout one-fourteenth.

Information of this kind reflects, in a measure, at least, the close food margins on which city dwellers in Central Europe have been living. According to the United States food administration, the situation has been more critical among the surrounding nations which Germany has drained of food and it is these newly liberated countries that must have food from America promptly and in plenty.

MORE VEGETABLES IN CHICKENS' DIET

The scarcity of beef scrap, together with its high price, has led poultry specialists of the United States department of agriculture to conduct feeding tests with laying hens in which cheaper and more plentiful kinds of protein feed are tried. In these tests feeds rich in vegetable protein have been used in connection with beef scrap to make up the laying ration. One pen of hens fed a mash containing 20 per cent beef scrap produced the greatest number of eggs, but a second pen fed a mash consisting of ten per cent peanut meal and ten per cent beef scrap produced an average of only ten eggs less during the test period of 5½ winter months. Mashes made with soy bean meal, cottonseed meal, and velvet bean meal, in combination with beef scrap, have been fed with fairly satisfactory results.

CHRISTMAS 1918

If slighter fare our tables here afford,
And fewer guests our homely joys enhance,
Where millions press we spread a grander board;
This year we hold our Christmas feast in France.

We shall be host to Nations! — all who strive
For deathless right, the greatest and the least
Who give their best that Freedom shall survive.
This year we hold a nobler Christmas feast.
—Arthur Guiterman.

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McAdoo has increased pay of railroad agents, $95 per month being made the minimum. There will be a general wage increase of $25 per month.

WEATHER CONDITIONS

San Francisco, Dec. 14, 1918.

Stations	Rainfall Wk.	Season.	Norm.	Temp. Max.	Min.
Eureka	1.08	10.54	12.35	62	36
Red Bluff	.43	14.07	7.47	56	
Sacramento	.48	7.17	4.97	52	34
San Francisco	.76	10.58	5.56	56	43
San Jose	.36	9.61	4.16	58	30
Fresno	.48	3.75	2.60	58	34
San Luis Obispo	.54	7.05	4.32	68	38
Los Angeles	.00	3.96	3.19	74	46
San Diego	.69	3.52	1.81	68	48

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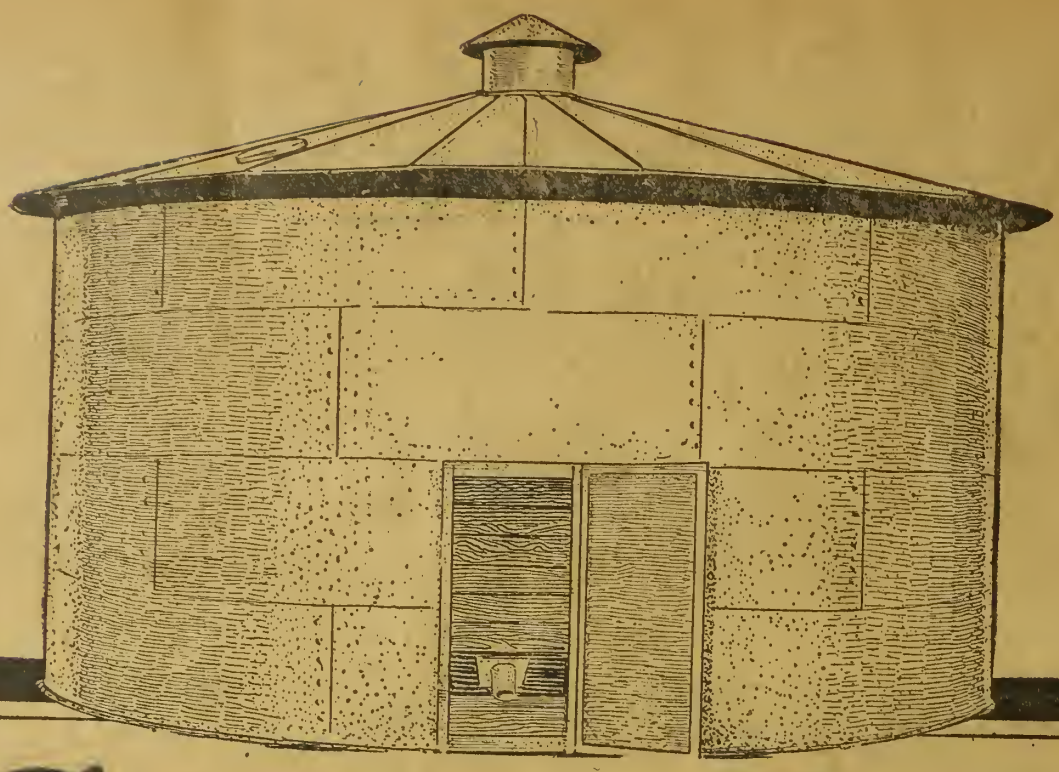

Calco Metal Grain Bins may be erected quickly with unskilled labor. A hammer and a monkey wrench are all the tools needed. These fire-proof bins come in galvanized sheets, punched and shaped to fit. Galvanized stove bolts hold them in place. They are durable, rust-resisting, economic bins for grain handling. Capacities from 600 to 5400 bushels.

Save Grain

Handling grain in sacks causes waste—large waste. Experts find that 10% of all California grown grain is wasted through sack handling. One-tenth of each year's crop eliminated. One-tenth of the grower's profit—gone. One-tenth of the California crop of grain never reaches its market. Absolute waste. How? A little here and a little there.

Save Grain from Rain

Sacked grain in the fields becomes filtrated with dust—rain comes, the bottom of the sacks are spoiled—the grain often sprouts before it is shipped. How much grain did early rains cost you last year?

Save Grain from Vermin

Rats, mice, gophers,—little ways that destroy a great quantity of California's sun-drenched, golden crops. The holes rats and gophers gnawed in your sacks last year—how much did it cost you?

Save Grain from Leaking Sacks

Leaking sacks! They are ripped when thrown down, a snag, a nail, careless help—and the weak place gives way. How much did you lose this way last year?

Save on Labor

How about your labor problem? How many sack sewers, buckers and jiggers did you hire? You threshed and left the sacked grain in the field. You were trying to get the most out of your help.

Handle Grain in Bulk

Suppose you could harvest your grain *without* sacks, sewers, and jiggers. Suppose you could thresh your grain directly into a dump wagon—in bulk—and put it into a fire-proof metal bin on your own farm? You could let your *extra* help go and save those wages.

Save Sack Costs

You would save the entire cost of sacks. You would cheat the rats and gophers, the birds, the rain, fire and thieves. You would *save*—not waste.

Write for this Booklet

The Calco Metal Grain Bin is for the grain grower who watches the corners. It is rat-, mice-, gopher-, fire-, weather-, thief- and waste-proof. Write for the booklet, "Calco Grain Bins." It tells of the costs of handling grain by sacks and the saving in bulk handling. Just write your name and address on the edge of this page and mail it. It does not obligate you a particle. Do it NOW.

California Corrugated Culvert Co.

419 Leroy Street, Los Angeles — 408 Parker Street, Berkeley

Calco Metal Grain Bin

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles — An Illustrated Weekly for the Rural Home and Ranch — San Francisco

Vol. LI — December 28, 1918 — No. 26

Established 1877 Forty-first Year

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and LIVESTOCK and DAIRY JOURNAL

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Saturday, Dec. 28, 1918

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

A striking picture of a California asparagus field appears on this week's cover. The culture and canning of this luscious vegetable adds much to the worth of California agriculture, and while its area of growth is somewhat restricted all producers are interested in methods of growing and packing it.

W. S. S.

We do not know whether the sale of war saving stamps will be continued through the new year. We assume not, but suppose every Cultivator reader has purchased some of these "little bonds". In any case the attention of the younger readers of the Cultivator, who may have invested in thrift stamps, is called to the fact that these stamps should be exchanged before January 1 for war savings stamps. Bear in mind thrift stamps bear no interest; the only way to change them into interest bearing paper is to make this exchange.

ANOTHER RESOLUTION

Last week reference was made to the fact that California ranked sixth in the number of cow testing associations in operation—there are 16 according to government figures. It was also stated that this state ranked second in number of herds in associations; second in number of cows in associations, and first in number cows per association.

There is really no reason why California can not take first place in every angle of cow testing work. And once the value of these associations to the dairy interests is made plain we feel sure that the state will take her place at the head of the list.

There are over 500,000 cows in California; 19,814 cows are in associations. The number can be doubled and trebled in 1919.

A 1919 RESOLUTION

Packers assert that they have been able to buy hogs of better quality and finish the past fall than ever before. The reason is not difficult to locate. California producers are learning the value of better blood and better methods of feeding.

Surely the day of the "tule rooter" is passing—but is not passing fast enough! There are still vast numbers of the old familiar sorts ranging in this state. The most effective way to eliminate these unprofitable workers is through the use of better boars of any of the established breeds.

Great strides can be made in 1919 if the pork producers of California resolve that only pure bred boars will be purchased for use in their herds.

No question is more capable of convincing demonstration than that good blood pays. The year 1918 furnished plenty of evidence. Let 1919 furnish more.

E. J. VOSLER

Everett J. Vosler, for several years secretary of the state horticultural commission, later special investigator in Australia for the commission, later resigned to enter the U. S. army, died at Fort Rosecrans November 7, 1918.

While still a young man—he was born in 1890—Mr. Vosler has proven one of California's thoroughgoing investigators. His original work was done in the Colorado agricultural college, from which he graduated. He entered the service of the bureau of entomology of the United States department of agriculture, giving much time to the study of the alfalfa weevil. He came to California as assistant superintendent of the state insectary and was later promoted to the secretaryship of the commission.

In a tribute to him in the Monthly Bulletin, Superintendent Harry S. Smith of the state horticultural commission writes: "His whole life is summed up in those words of his, so characteristic of him, uttered by him on his deathbed: 'Mother, I have done my best.'"

WRITE BEFORE YOU SHIP

During the past few months the hog market has been characterized by unprecedented receipts at the primary markets. The killers had expected increased supplies, but no such runs as have been pouring into the markets for weeks were anticipated. On top of a flood of hogs the killing gangs have been demoralized through the influenza epidemic, and, being short of help and long on hogs, the packers were forced to appeal to the government for relief. Embargoes were established. But even under an embargo heavy accumulations have occurred.

So far as Coast markets are concerned, the situation has not been as grave as in the East. Los Angeles has handled all shipments, but San Francisco killers have accumulated a surplus, and with continued shipments in prospect the Coast firms are asking that producers do not ship their hogs without first ascertaining whether or not they can be handled.

There is no reason for producers becoming panicky. The price for January has been established; grain can be fed at a profit; and the packers will handle the situation if they are given a little cooperation by the growers.

All that they ask is that producers write before they ship.

SUCCESS does not mean the mere accumulation of money. That is but a part of success. There is a success greater than the mere accumulation of money. It is the accomplishment of a worthy purpose, the development of yourself and your associates, the creation in yourself of the qualities of leadership. It includes a broadened vision.

Here's to California Cultivator Readers: May 1919 offer opportunity for Broadened Vision and Greater Development—Hence

A HAPPY NEW YEAR.

THE YANKS ARE COMING

The Yanks are coming home from "Over There" and from "Over Here." Every ship across the Atlantic has its contingent of the returning boys. These, including others released from the various cantonments in this country, now aggregate 30,000 discharges daily. This is for the information of subscribers of the Cultivator who have written asking as to when "Our Boy" will be released. Such a question cannot be answered definitely as to any one, for, while the government is releasing the boys as rapidly as possible, it must retain some of the millions in the service for the final clean-up. It is supposed that at least one and a half millions will be left in Europe for many months to come. Release will come more swiftly for those in American encampments.

DIFFICULTIES

Edward Berwick writes that he thinks some Americans are getting cold feet in the matter of getting worth-while results from the war. He says:

"A family has just two ways to live—in accord or discord. Which is the whichest? The family of nations has the same choice. Discord's dire result are but too obvious. Discord spells dead failure, death and destruction! Accord, harmony, 'league of nations,' 'world commonwealth,' call it as you will, is now being 'damned with faint praise,' or declared impossible. This in face of the fact that in these last few months the civilized world has virtually pooled its issues, its food supply, its cash, its man power, and placed its every resource at the disposal of one individual. Accord downed discord!

"Difficulties? Yes! There always are! Americans live to surmount them! Let everyone quit 'knocking' the proposed league, and get back of President Wilson and make it possible. Today's impossible is tomorrow's fact accomplished!"

We may go one better and say that there is but one way for a family to live, and that is in accord, but if it should happen that the family grows larger and that ultimately some great double fisted brute proceeds to run amuck and beat up the weaker members of the family and smash up the furniture and create discord generally, the other big brothers of that same family become craven wretches if they don't take a hand and enforce control where there is no self control. Time was when America was too proud to fight, but, Glory be! that time will never come again, for the world now recognizes the necessity of pooling issues.

The League of Nations is all right and will have a wonderful influence in controlling the big brutes of the future but it will do it through the exercise of force because force is all the control which some beings recognize.

LOOK TO BANK BALANCE

Fruit canners, dryers and, in fact, all food producers are placed in a most embarrassing situation by cancellation of orders for goods which have been produced, canned and packed under the requirements of the department of war. Too often the cancellation was made in such a way as not to give entire freedom to the producer in disposal of his product. Some details of the situation as to prunes and apricots may be seen in Mr. Coykendall's statement in last issue. Where entire release has been given the market has not been able to take the increased offerings at prices equivalent to those which might have been had earlier in the season. The worst of the situation is in this, that the feeling prevails that producers are not being fairly treated.

For instance, the Lima bean people have a large supply of beans cleaned and sacked, ready for delivery but for which there is no sale. They were approached by a broker "who claims he has an inside pull with the government" and who agreed to take 40,000 sacks for government delivery providing he were paid his commission. As the association had the only supply sufficient to meet the demand of the war department it could not figure out why its members should be deprived of a part of the cost of producing the beans to pay the middleman. The middleman insisted that the deal could only proceed through him and made good in calling the entire deal off, and the government has failed to deal direct with the people who raise the beans.

The wheat growers of the Northwest have met with a similar situation, or, rather, have been unable to secure full values for their wheat because of grading rules made so as to favor the millers. For instance, one grading rule that Number One Hard should not contain in excess of 2½ per cent of rye resulted in literally millions of dollars being cut from the prices paid to wheat growers. Of course, the grading rule did not follow the wheat into the miller's hands, and he, after buying his Number One wheat, shaded some 15 cents per bushel because it contained less than a pound and a half of rye, still used it with all other Number One Hard in milling highest grades of flour. The millers made millions; the farmers did not.

The farmer has stood true blue, and when the nation shouted "Produce More" he has produced more—with less employment of labor and greater use of labor saving machinery. But he will not stand for being promoted. Secretary Houston recently remarked, "The farmer must be as insistent in looking to his bank balance as any other business man.

Canning Asparagus in California

By Arthur L. Dahl

OF ALL canned vegetables used during the winter none is more palatable than asparagus, for it is one of the few food products the flavor of which is really enhanced by canning. In fact, asparagus is one of the most popular members of the vegetable family. Besides having a pleasant taste, it contains some very valuable mineral salts required by the human body.

Asparagus is canned to a limited extent in the Eastern states, but the great bulk of the commercial canning is done in California, which is peculiarly adapted to the growing of asparagus. The long growing season, with the constant succession of warm, sunny days in the dry season; the rich soil of the delta region of the Sacramento Valley, and an abundant supply of water for irrigation, insure large and perfect crops of the stalks, and the enterprise of the packers in building their canneries in the immediate vicinity of the growing fields, which enables them to can the fresh asparagus within an hour or two after picking, thus preserving the tenderness and succulence of the fresh product. Asparagus, if allowed to stand too long after being cut, will become tough and bitter to the taste.

Most of the asparagus beds of California are located in the delta lands along the Sacramento River, which are exceedingly fertile and with a light and mellow soil. Asparagus can only be grown upon the richest types of soil, and as it requires a great deal of hand labor it is an expensive product. On the big plantations controlled by the canneries, however, it is grown in such vast quantities and the work is so systematized that the production costs are kept down to a minimum.

The plants are set in rows, four feet apart, and three years are required to bring them to a productive state. After the plants are matured, they are "hilled up" with soil to a depth of a foot or more. This forces the spears to grow about a foot to reach the light, and as no color is formed until the light reaches the tips of the spears they are perfectly white. For a long time after the California canned asparagus entered the market, many food experts believed that the stalks were chemically bleached, but the perfect whiteness of the product is caused by cultural methods alone.

After the spears force their way above the ground they become green in color from exposure to the sun. The harvesters pass between the rows, looking for evidence of the spears forcing their way to the surface. Whenever the ground appears cracked or broken, the harvester inserts a long chisel shaped knife, or "cutter," at such an angle as to cut the spears about nine inches below the surface. The spear is drawn from the ground very carefully so the tip will not be broken or cracked. Only one spear is cut at a time. The entire bed or field is gone over every day during the season, and only the ripe spears are taken.

The work of cutting the asparagus for the day's canning begins very early in the morning, as soon as there is sufficient light to see by. As fast as the lug boxes are filled they are hauled to the cannery, not far away. The quick handling of asparagus is imperative, if the true flavor and sweetness is to remain unimpaired.

At the cannery the asparagus is taken to the wash room, where it is carefully washed of all silt and then placed in racks and the irregular butt ends are cut off. The asparagus is then taken to the preparation room, where it is sorted and graded for size and color. Some of the spears are peeled and some scraped, the treatment depending upon the condition of the product.

When properly sorted and peeled, the asparagus is placed in large iron baskets and conveyed through a washing process which consists of passing

Blanching Asparagus

As soon as it has been sorted and washed in cold water it is dipped in boiling water. This not only for cleansing but to soften the fibers and fix the color.

under jets of cold water and of immersion in clear running water. The baskets are then run through the "blanching" tanks which are filled with boiling water. This serves to soften the asparagus and set its color.

The next step is to convey the product to the canning tables. Here the stalks are sorted and graded for the respective cans, and while waiting to be so graded the asparagus is kept in clear, cold water. In the larger canneries, such as those operated by the California Packing Corporation, every precaution is taken to insure absolute cleanliness. The tables, utensils and even the floors are washed at regular intervals during the day.

After the spears are placed in the cans the brine is added and the cans run through the "exhaust box" or "sterilizer," after which each can is sealed by an automatic sanitary sealing machine which crimps the caps onto the cans without the use of solder or soldering acids. They are then conveyed through the cooker and placed in a retort for the required length of time. Upon emerging from the retort they are loosely stacked in the warehouse and when thoroughly cooled are more compactly stacked to await shipment. The labels are put on just before they are sent out.

To determine the effect of time on the cut asapagus stalks, experts of the United States department of agriculture conducted experiments at one of the big California canneries. A quantity of asparagus was picked at the same time and divided into five lots. The first was packed within three hours after cutting, and upon arriving at the canning table every stalk was found to be fresh and crisp from tip to butt. The second lot was canned 24 hours after picking, and the stalks were found to have lost their clean luster but the tips were all tender and the flavor seemed unimpaired. Thirty per cent of the butts, however, were becoming tough and fibrous. The third lot, packed 48 hours after picking, showed more dulling of color and was growing yellow in color and slightly wrinkled. The tips were good, but showed a suggestion of toughness and bitterness. Half of the stalk was fibrous and of a decided bitter taste at the butt. Only half the stalk was edible. The lot held for 72 hours showed similar changes in a more marked degree, only the tips being edible. The fifth lot, which had been held for 96 hours, was found to be absolutely unfit for consumption.

Asparagus In California

Trimming the butts of the asparagus preparatory to delivery to the counter. This is done in shed adjacent to field.

The canned asparagus of California is now sent to all parts of the world, and thousands of acres of the richest land of the state are devoted to its culture. The annual production of canned asparagus amounts to approximately one million cases, and in addition large quantities are grown to supply the fresh markets of the state.

Asparagus thrives best on a sandy loam. As the crop requires a great deal of cultivation a light soil is necessary. The land must be fertilized regularly, either by the spreading of manure or commercial fertilizers, or by the growing of some sort of green covering crop, such as cowpeas, soy beans or other leguminous product. Even where manure or cover crops are used, a certain amount of commercial fertilizer furnishing phosphorus and potash is required. After the asparagus bed is established it is necessary to provide fertilizer every year. In most instances this is applied to the land in the autumn or winter and allowed to work into the soil with the winter rains.

As it requires three years to produce an asparagus bed which will furnish edible shoots, it is customary for growers to plant, during the first season, a crop of bush beans, peas or other vegetables between the rows of asparagus. The cultivation required by the asparagus will be sufficient for the companion crops and the return from such a crop will go a long way toward paying the cost of the asparagus bed. After the plantation has become established production can be secured for many years. At the end of each cutting season the asparagus bed should be thoroughly cultivated and fertilized. The ridges should be leveled and flat culture given during the remainder of the growing season.

The length of time an asparagus plantation will produce profitable yields depends upon the treatment it receives. While some beds produce profitable crops for as long as 15 to 20 years, the ordinary commercial plantation is renewed every eight to ten years.

Where asparagus is raised for the markets, it is essential for the grower to have it reach the market as soon after picking as possible, as it deteriorates very rapidly after being cut. It is not uncommon to pick over the same field twice a day as the shoots break through the soil very rapidly and the sooner they are cut when ripe the whiter and fresher will be the color and taste. As an evidence of the wide fluctuation in the price of asparagus in the markets, it might be cited that frequently in San Francisco asparagus will sell one day for 15 or 20 cents a pound, and the very next day, because of an unusual shipment, the price will drop to two or three cents a pound. Each day's supply must be disposed of that day, even at a loss to the grower. For this reason asparagus is one of the crops which is best served by the cannery. The amount of asparagus to be cut each day can be measured by the quantity to be handled by the cannery, and no loss is sustained by being forced to compete with large stocks of other growers.

POTATO WART INVESTIGATION

Vigorous action is being directed against the European potato wart disease, which was discovered in Eastern Pennsylvania. The federal authorities have detailed six trained plant pathologists to survey the infested area and have enlisted the services of several men engaged in similar lines of research from state agricultural colleges.

Assistance has been secured also from the Pennsylvania state college of agriculture and the Pennsylvania department of agriculture. It is hoped by this timely intervention completely to isolate and destroy all traces of this dreaded European plant disease, provided it has not been distributed already through the medium of infected stock to interior points.

Agricultural News Notes of the Pacific Coast

Northern California

A big food and farm bureau meeting is planned for Yolo County early in January. It will be held at Woodland.

Large supplies of potatoes are coming in from Northwest districts and these have brought down the market on local stock.

The Butte County Citrus Association has completed its pack. During the season the association shipped 18 cars of oranges.

County Horticultural Commissioner Earle Mills pronounces the pear blight situation in Paradise, Butte County, now under control.

The Oroville chamber of commerce has gone on record as favoring a cooperative movement for good roads bond issue for Butte County.

The farm adviser of Butte County addressed a large group of boys of the community Y. M. C. A. at Oroville. Mr. Sweet spoke on modern farming.

Experimental plantings of cotton in Glenn County are reported not to have matured properly because of excessive moisture from the rice fields.

Eight hundred acres in Yolo County has been leased by the California Packing Corporation and will be planted to onions, asparagus, carrots, tomatoes and other canning truck.

There was a big farm tractor parade in San Francisco December 18, conducted by the California Tractor and Implement Dealers' Association. Forty machines were in the parade.

The past year has been a good one for beemen. California's production this year is estimated at 100 carloads. This represents a large part of all the honey consumed in the United States.

The output of olive oil in the Oroville district will be light this year because of the short crop and the large tonnage that has been converted into Greek and other varieties of salt cured olives.

The Seriterre Company which owns about a thousand acres in the Wyandotte district of Butte County has started planting 200 acres to mulberry trees. It is planned to ultimately plant the entire thousand acres to mulberries.

The plant of the Sunical Packing Company at Oroville will be greatly enlarged before another season. It is now handling a large list of products: Spinach, pumpkins, tomatoes, peaches, olives, and in 1919 will add string beans.

Farm Adviser W. L. Sweet of Butte County has been demonstrating the new methods of pruning. The method is based on experiments carried on at the University Farm and it is said it will increase the bearing age of the tree by one year.

At a meeting of the Mendocino Stock Growers' Association it was agreed to support the effort of the State Cattlemen's Association to procure legislation enforcing the use of pure bred bulls on the open range and the forest reserve.

At a meeting of the live stock interests of Butte County Forest Supervisor Rogers of the Plumas forest outlined a new plan of ranging. It is proposed to throw the section of the national forest from the middle fork of the Feather River to Canyon Creek into one range. It is also agreed that only Shorthorns and Hereford bulls will be allowed to range on the national forest.

Central California

The new cotton gin at Bakersfield has just had its intial run on long staple.

The Tulare County farm bureau will hold its annual meeting at Visalia January 16.

The Tulare County farm bureau will hold its annual meeting in Visalia January 16.

Pruning demonstrations are being planned by the Aromas farm center, Santa Cruz County.

The farm bureau of Madera County held a two day fig institute at Fairmead, December 16-17.

The Terra Bella Canning Company reports that the season's pack will total about 14 carloads of tomatoes.

Manufacturers of grape syrup expect for another season to have installed machinery with flavor saving devices.

The 21st Annual Poultry and Pet Stock Show of the Santa Clara Valley, held at San Jose closed Sunday, December 8.

Kings County Poultry Association decided to postpone the show which was scheduled for December 18-21 until January 14-17.

Successful experiments have been conducted in the Clovis district of Fresno County in destroying mildew in partly cured raisins by dipping in lye.

The farm bureau of Santa Cruz County is planning to inaugurate a campaign for the eradication of squirrels and gophers. The drive will begin the first week in February.

Fresno is inviting tractor associations to hold a big demonstration at Fresno next spring. Fresno points out that it is the center of the largest field for tractor use in the state.

Fig growers' meetings which were to have been held at Visalia, December 12 to 14, by Prof. I. J. Condit of the state university, have been indefinitely postponed because of Prof. Condit's illness.

P. H. Bates, inspector of apiaries for Kings County, reports that the production during the past season has been far below normal. Out of 2244 apiaries inspected only 190 were found to be infected.

One of the largest shipments of hogs from Kings County was made December 5 when 12 carloads were sent to the Los Angeles and San Francisco markets. The shipment was valued at over $30,000.

County Horticultural Commissioner Collins of Tulare County denies the statement recently credited to him to the effect that there were no thrips in Tulare County this year. Mr. Collins says there are many thrips.

At the monthly meeting of the Kings County farm bureau it was decided to request that the United States employment bureau be continued there. Kings County ranchers are quite disgusted with the quality of labor available.

The first annual report of the county farm adviser of Tulare County has been issued. The report discloses the fact that 900 farmers are now members of the Tulare County farm bureau and recounts the varied activities of the bureau during the past year. The annual meeting will be held at Visalia, January 16.

Southern California

A new Pima cotton gin has been opened at El Centro.

Saticoy, Ventura County, harvested 2000 tons of walnuts.

Ventura County grew last year about 90,000 acres of beans.

Imperial County is asking for a branch of the state agricultoral college.

It is rumored that several experiments in tobacco raising will be made in Imperial.

Beekeepers of several counties of Southern California met at Riverside December 16.

The last "live stock shipping day" from Imperial Valley showed 45 carloads of stock out.

The Half Century Association is planning to establish a permanent labor camp at Brawley.

There are about 40 attendants at the tractor course being held at Brawley, Imperial County.

The Imperial County farm bureau bid on supplying turkeys to various cantonments of California.

The board of supervisors of Imperial County has placed a bounty of ten cents each on gopher scalps.

The California Walnut Growers' Association has marketed this year for its members 12,500 tons of nuts.

The San Fernando Citrus Association is employing a unit of the Women's Land Army to pick oranges.

Riverside has appointed a committee to take charge of its display at the National Orange Show to be held at San Bernardino in February.

Frosty nights early in the month are responsible for nipping some of the olives and throwing them out of the pickling class into the oil vats.

Notwithstanding two oil mills are operating in Imperial County, large quantities of cotton seed are being shipped to Los Angeles for refining.

Southern California growers produced tomatoes for more than $5,000,000 worth of packed goods. It required 20,000 acres to produce the fruit.

Ventura and Santa Barbara Counties still have millions of dollars' worth of beans stored, but the growers anticipate an early improvement in the market.

A canvass of the lands in water company No. 4, Imperial County, shows plantings of cotton cover 5360 acres while the plantings of the next crop of alfalfa are less than 3000 acres.

Many citrus growers of Rialto, Bloomington and Fontana are manifesting much interest in the proposal to make the raising of vegetable crops a companion industry to the raising of citrus fruits.

Some little concern is felt by packers in the Redlands district because of marks which some of the oranges show, fine lines running through the skin that throws fruit of the finest quality into second grade.

At the 19th annual meeting of the San Dimas Orange Growers' Association it is reported that the total shipment for the season was 128,622 boxes. Directors elected for the coming year are: E. W. Hart, president; J. S. Billheimer, vice president; Wm. Ferry, H. S. Gilman, W. A. Johnston, A. C. Phares, H. E. Walker; E. M. Wheeler, manager.

The Coast and General

Egg marketing clubs are becoming general in Arizona.

All restrictions have been removed by the federal government from purchases of lime for agricultural use.

The postoffice at Hood River, Oregon, expects to handle at least two carloads of apples in parcel post shipments.

The cannery at Cottage Grove, Oregon, has finished a successful pack of which blackberries were the largest single feature.

Arizona counties are generally encouraging the work of home demonstration agents in connection with the farm bureau work.

The annual meeting of the American Fruit and Vegetable Shippers' Association will be held at Chicago, January 31 to February 4.

America is becoming more of a sugar beet producer, producing during the last year about 60,000,000 pounds from 6014 acres.

There were 50 sugar factories in Poland which before the war handled about one million tons of beets per year. There were 20 factories destroyed during the war.

The Arizona county agricultural agents report not only a great increase in farm crops as a result of the war aid efforts but an exceptionally important increase in the interest in live stock.

At the recent meeting of apple growers at Hood River, Oregon, the new grades proposed for box apples by the federal bureau of markets were neither commended nor condemned, the growers preferring to leave matters as they are.

The University of Arizona is recommending a more general use of cotton seed meal in increasing the protein feed, but urges care in feeding to hogs, recommending not more than one part of cotton seed meal to seven parts milo or barley.

The winter lettuce plantings in the Salt River Valley of Arizona are not so large as in former years but it is hoped that with the return of more laborers with peace conditions it will be possible to build up the old industry or make it even better.

Roads now being built on the Cranberry Peninsula of Washington will open up larger plantings another year. It is expected that the fruit can be put more quickly on the market by trucks than where growers have to rely on railroads and water transportation.

There is friction between the growers of sugar beets and the manufacturers because of the manufacturers refusing to accept satisfactory pulp contracts for 1919. The growers insist that the pulp shall be distributed proportionately between the growers, then if there be a surplus let it be distributed to farmers who were not beet growers.

Sugar beet growers of the Yakima Valley were paid the sum of $40,000 as the first monthly payment for beets by the Utah-Idaho Sugar Company, which pays for the beets delivered on the 15th of each month. But few of the beets have been harvested, and it is estimated that the December 15 payment will amount to $450,000. The amount paid represents 4000 tons of beets, approximately the crop from 250 acres.

How to Grade Grain

By Rollin E. Smith, Grain Supervisor
United States Bureau of Markets

AN INCREASING interest in federal standards for wheat and corn is becoming apparent in many parts of the country, with a view to enabling grain raisers to grade their own wheat and corn with at least a fair degree of accuracy. In deciding upon the requirements for the different grades particular care was taken to make them definite, thereby leaving as little as possible to the judgment of the inspector. Some apparatus is necessary to make some of the tests, particularly for moisture, which during some seasons is one, if indeed not the most important, of all the tests for both wheat and corn.

Grades

Under the official grain standards of the United States for wheat the soft red winter class is made to include all varieties of soft red winter wheat and red hybrids of the Pacific Coast, and red club. This class is divided into two sub-classes, only one of which need be considered here, namely, red winter, which is the predominating wheat throughout the southeastern quarter of the United States. Therefore, in the central states, the grading of wheat is simplified as compared with some other parts of the country.

The sub-class red winter wheat, according to the definition of the official grain standards, includes wheat of the class soft red winter, consisting of both light and dark colored kernels. But red winter does not include more than 10 per cent, either singly or in combination, of red Russian, red club, etc.

Red winter, like all other subclasses, is divided into six grades, Nos. 1 to 5, and sample grade. Descriptions of the grades may be had, on request, from any federal grain supervision office, or of the bureau of markets, Washington, D. C.

The United States department of agriculture in October, 1918, issued a "Handbook of Official Grain Standards of the United States for Wheat and for Shelled Corn." This handbook contains brief specifications of the official standards for wheat and shelled corn, and a brief discussion of methods of grading. A copy of this handbook will be mailed to any address, on application to the United States Department of Agriculture, Washington, D. C.

How to Take a Sample

The first step in inspection and grading is to take a correct sample. Particular attention is called to the most desirable size of the sample, which is not regarded as representative of the lot unless taken as described below. It should be at least two quarts in size. It is necessary to inclose at least 1⅛ pints in a clean air-tight container (can or glass jar), though the entire sample may be so inclosed. It is not necessary to inclose any of the sample if the moisture test is to be made at once. But if 1⅛ pints is inclosed in the air-tight container, the rest of the sample should be placed in a clean cloth sack, as the moisture test is made separately.

The air tight container is, of course, to prevent the moisture in the grain from evaporating. The grain must, for the moisture test, be exactly the same as the lot from which it was taken. This should impress upon the farmer and the country grain dealer the importance of correct treatment of samples. For example, the exposure of a sample of wheat or corn to the air for a few days, unless in very damp weather, would so reduce the moisture content that such sample would not be representative of the lot of grain from which it was taken. The difference in the moisture content might easily change the grain in the sample one or two grades.

Instructions relative to the taking of samples apparently cover all contingencies that are likely to arise—the taking of samples from carload lots, from wagons, canal boats, barges, ships and other vessels; from sacks, warehouses and elevators. In this article, however, one paragraph from the instructions will probably suffice. The paragraph follows:

"In case of bulk grain in a carload or wagon, at least five probes, and as many more as may be necessary, shall be drawn from the grain at different parts of the car or wagon." (The "probe" used for the taking of samples is described and illustrated in the handbook of official grain standards for wheat and for shelled corn.)

THE NEW YEAR dawns upon great problems, but upon greater promise. And each day's problem met fulfills the promise of the year. To each and all the California Cultivator wishes a year of busy and of happy days.

The grain drawn from different points in a lot or parcel is emptied on the sampling cloth and should be thoroughly mixed and placed in a cloth bag; but first, each probe of grain should be examined for odor, temperature, and condition of the grain.

Moisture Test

The moisture test is now generally recognized as almost, if not quite, as important as the test weight per bushel, for moisture is an important factor in the milling value of wheat. Not only does it add actual weight that can not be turned into flour, but excessive moisture makes it necesary for the mill to dry the wheat. This means extra expense as well as the loss in weight in the wheat. The moisture standard is necessary, because it has been proved that wheat containing over 14 per cent of moisture requires intelligent handling in order that it may be restored without great risk of serious damage. The great dread of terminal elevator companies is that the wheat in their bins may heat; but it will not ordinarily heat if the wheat is sufficiently dry.

The same is true of dockage and smut. Speaking generally, millers, as well as terminal elevator companies, prefer to buy clean wheat rather than dirty, even if the latter is a few cents cheaper. While an allowance is made in the price for the dirt or smut in wheat, the screenings that may be taken out and sold may not cover the cost of the necessary work. To eliminate smut, the washing and scouring results in a loss of bran in addition to the expense of doing the work. Therefore, it may be said that while dirty wheat is penalized in the inspection, it is justly so, for the grades are based as nearly as possible on the final test of wheat, namely, its flour making value.

In the inspection rooms, the moisture test is the first in the order of handling samples. It is made from the sample in the air tight container. The percentage of moisture permitted in the different grades of red winter wheat and corn is as follows:

	Wheat,	Corn.
No. 1	13.5	14.0
No. 2	14.0	15.5
No. 3	14.5	17.5
No. 4	15.5	19.5
No. 5	15.5	21.5
No. 6	.....	23.0

The percentage of moisture in grain is determined by a moisture tester, which, with the method of its use, is described in Circular No. 72, issued by the bureau of plant industry of the United States department of agriculture. Both the construction of the tester and the method of its use have been made as simple as possible, so that reliable tests can be made by any careful worker, even though he may not have had special training.

It is not necessary that every farmer should have a moisture tester. The few tests in a season that any farmer, unless he is a very large grain grower, will make would hardly warrant the general buying of testers. Doubtless the nearest elevator company that has a moisture tester would make tests for farmers. Then, too, a group of farmers could buy a tester and install it in some house convenient to them all. Instructions in its use could be had from the county agent.

The method of making a moisture test is to place the grain from its air tight container (100 grams or 3 4/7 ounces of wheat is used in the inspection offices, because of the ease of arriving at the percentage) in a distillation flask and the grain covered with mineral engine oil having a flashing point considerably above the boiling point of water. A thermometer is placed in the flask, held in place by means of a rubber stopper, with the bulb covered with the oil. The flask is connected to a condensing tube in the rear of the tester. When ready, the flask is placed in its compartment over a wire gauze and a gas jet underneath is lighted. The oil is heated to 180 degrees centigrade, which causes the moisture in the grain to evaporate and pass into the condensing tube, from which it drops to a graduate cylinder placed underneath. The percentage of moisture is shown by the scale on this cylinder.

The process is so simple that any careful person can make a test by following the instructions given in Circular No. 72. A single test can be made in 25 to 30 minutes. With a six compartment tester, six tests can be made in about the same time as one.

Scales Used by Inspectors

While scales are not a part of the moisture testing outfit, they are necessary for weighing the sample. Certain types, simple in construction and comparatively inexpensive, have proven satisfactory. Those in common use in inspection offices have a special scoop for pouring the grain into the distillation flasks.

These scales give the weight in grams instead of ounces and grains. The gram is the unit of weight in the metric system. By this system the weight of any given amount of grain is readily changed to percentages.

For example, any original sample is divided by licensed inspectors and one part weighing 1000 grams is used to determine the dockage and test weight per bushel. This amount, 1000 grams, is two pounds and three ounces. Any quantity may be used, but on the scales used, the percentage of dockage is readily determined. If, for example, 50 grams of dockage is sifted out, the dockage amounts to 5 per cent; 40 grams would be 4 per cent, etc.

Smaller quantities of wheat are used in making the other tests. The department recommends from 25 to 65 grams of wheat and 240 to 260 grams of corn. This is approximately one ounce to two and a half ounces of wheat and eight and a half to nine and a half ounces of corn.

To arrive at the percentages in the tests where these small quantities of grain are used, a table is referred to which gives the amounts in percentages of 100 pounds. This table has been published in United States Department of Agriculture Bulletin No. 574. In making the test for damaged kernels in a sample of hard red winter wheat, for example, such kernels are separated by hand from a 40 gram sample (28 grams to an ounce) say. The damaged kernels are then weighed. If they weigh one gram, for instance, reference to a table in Bulletin No. 574 shows that this is 2.5 per cent.

If other scales than those showing the weight in grams (the metric system) were used, it would require considerable work to arrive at percentages. Such scales can easily be obtained, and they can be used as readily as scales that are familiar to every one.

Most Tests Made From Clean Wheat

After making the test for moisture, the remaining tests, in the case of wheat, are made from the sample from the cloth bag. Tests for moisture, temperature, odor, onions, garlic, and live weevils are made before the dockage has been removed from the sample. All other tests are made after the dockage has been removed.

The points to be observed in the odor test in wheat are: Natural, slightly sour or musty, very sour or musty, heat damaged, smutty, garlicky, foreign odor.

Odors in grain are detected as odors usually are—by the smell. There is no artificial or mechanical means of determining this quality in grain. Therefore the accuracy with which it is done depends upon the experience of the inspector and the acuteness of his sense of smell.

Continued on Page 673

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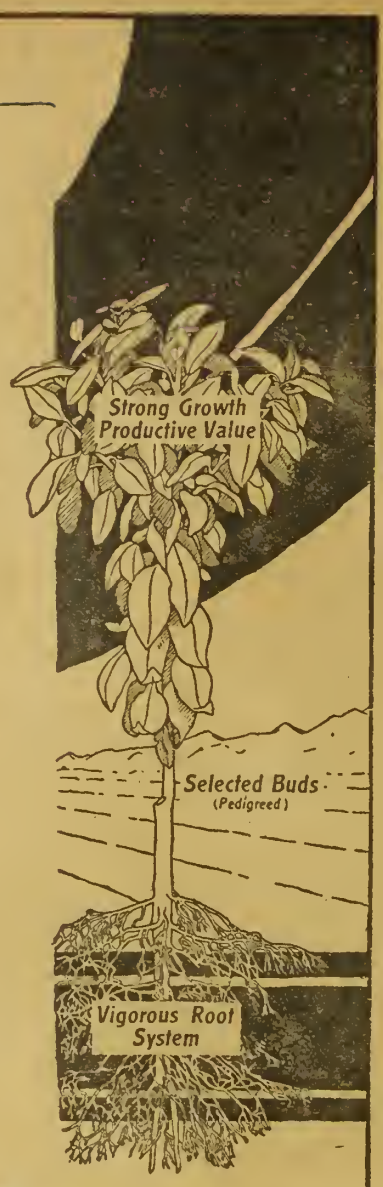

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Green Manure Crops in Old Citrus Orchards

Written for California Cultivator By J. B. Neff

WE PRESUME that every one who can profitably grow a green crop for plowing under has it planted or is preparing to plant. Considerable doubt is often expressed as to the value of green crops in old orchards, and the growing of such crops has been abandoned by some orchardists on the presumption that it does not pay. It is a fact that when green crops are to be grown in old citrus orchards where the trees are almost touching and but little sunlight can reach the ground the crops do not make large tonnage and will not supply the needs of the trees in humus forming material, but this does not mean that the small crop will not pay its cost of growing and be the source of considerable fertility for the trees. A crop of 20 tons of green material on an acre is not uncommon where melilotus is sowed on open ground or among deciduous trees after the leaves have fallen, but since there is often less than half the ground uncovered in old orange orchards we will assume that not more than five tons can be grown on an acre. The cost of growing an acre will be about as folloys: Seed for half the ground, eight pounds at 12½ cents, $1.00; planting, 50 cents; water and labor when an additional six acre inches has to be used to grow the green manure crop, $3.30, or a total of $4.80 for five tons, which is less than one dollar a ton for the material.

The potash and phosphorus which is in the green crop came from the soil and is in a better form for the trees to use, while at least one-half the nitrogen in the crop came from the air and is clear gain. This nitrogen at present prices would be worth more than one dollar for each ton of green material and would pay all expense of growing the crop.

The humus forming value of manure is usually estimated as being equal to the fertilizing value and in this case leaves a profit of more than $5.00 per acre in favor of the green crop. We must have humus in the soil if we are to grow oranges and lemons, so must not neglect any means of securing it as it is not possible to get sufficient stable manure to supply all the orchards.

County Horticultural Commissioners Meet

One of the strong factors in the upbuilding of the California fruit industry has been its horticultural laws and their efficient enforcement. Their enforcement has been made possible by the enactment of state laws, one creating horticultural commissioners in the county, another creating a state horticultural commissioner with power of appointing quarantine or other officers.

As noted, these officers have given efficient enforcement of these laws, and at the same time there have been mistakes made which constantly call for a revision of the laws. At present the commissioners operating in the counties and the state deputies are entirely independent, excepting, as a matter of good will and for the securing of common efficiency there has usually been united action. But both state officers and various county officers are now feeling the need of more complete revision of the laws under which these various bodies operate. To the end that the best suggestions might be brought together the state organization of county horticultural commissioners recently met in Sacramento and discussed the variout amendments suggested in the state laws. State Commissioner Hecke has felt that there should be closer cooperation and has suggested that the various county officials should come under the entire direction of the state. On the other hand many of the county commissioners maintain that, owing to the wonderful diversity of California conditions and to the fact that even a serious insect pest may have found lodgment in one county and not in another, the various county organizations should be maintained intact and should be supreme within their own boundaries.

While this may be true, it has led to a series of misunderstandings among the fruit growers, the nurserymen and others until it is evident the entire state law demands some changes, but as to the state commission having entire supervision the meeting of county commissioners failed to develop fullest support in this matter. The county commissioners, having expressed fullest confidence in the present state commissioner, referred the matter of legislation to a special legislative committee.

As to the resolutions and the membership of this committee we quote from report of the meeting supplied by Secretary Avery S. Hoyt of the state commission:

Whereas, certain weed pests occur in various counties of this state to the detriment of agriculture; and there is need for a statewide campaign to eradicate and prevent the spread of weed pests, be it resolved, that the State Association of County Horticultural Commissioners put itself on record as favoring such a statewide campaign, and pledge united action in an effort to eradicate serious weed pests which occur generally throughout the state;

Be it further resolved, that the State Association of County Horticultural Commissioners pledges its support to the state commissioner of horticulture and urges the enactment of a law creating a weed department of the state horticultural commission, and that further, its influence will be used with members of the state legislature to secure the passage of any law which will aid in the control of weed pests.

After much discussion, it was de-

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cided to submit to the next legislature amendments to the present county horticultural commissioner's law, which would place the supervision of the work in the various counties of the state under the jurisdiction of the state commissioner of horticulture. This matter was placed in the hands of the legislative committee, consisting of O. E. Bremner of Sonoma, William Gould of Yolo, H. H. Ladd of San Joaquin, C. F. Collins of Tulare and C. F. Turner of Placer. As an expression of their opinion on this question for the guidance of their legislative committee, the association introduced and passed the following resolution:

That we the State Association of County Horticultural Commissioners, pledge our confidence in Mr. Hecke's sincerity of purpose and pledge our earnest support in his efforts for the betterment of the service we are pledged to deliver to our respective counties and the state of California.

Saving One Man

Driving rod extension give control over the tractor from the implement operator's seat and save one man's time.

SAVED ONE MAN

THE labor shortage incident to these war times has placed the farmer in a particularly trying position. Unskilled labor suitable for his purpose has been difficult to obtain and able-bodied experienced help almost impossible to secure. To add to his difficulties, demand for greater production has been made upon him. But in spite of these handicaps he has measured up to the emergency in his characteristic manner where a less resourceful man would have acknowledged defeat. The farmer is daily meeting and solving problems which ordinarily would seem to defy solution. Much of the farmer's success is to be attributed to the improved implements he now uses for carrying on his work and which enable him to greatly increase his production per man. Among these implements the tractor has proved the most potent in making his campaign successful.

Recently labor shortage pressing more heavily upon him, the farmer has called upon his ingenuity to further supplement the labor saving features of his tractor, and has not called in vain. He is now extending his tractor controls to the implement he is pulling and, by thus bringing both under the supervision of one man, has dispensed with the services of one helper.

Numerous owners of tractors have successfully operated under these unique conditions during the past season. A few days since a tractor owner in the vicinity of Hanford desired to level some unplowed land. He extended his tractor controls to a six-foot Hanford scraper in the manner illustrated, and thus equipped dispensed with the services of one man, and performed his task successfully and at a trifling cost compared to the expense necessitated if he had used horses.

Labor shortage loses much of its terror when the farmer is tractor equipped.

NEW CITRUS TROUBLE

Some of the citrus districts of Southern California are reporting trouble in the marking or slitting of the skin of some of the earlier ripencing oranges. While not serious it is causing concern as to what it may mean. The Redlands Review reports:

"Some little concern is being caused the packers of Redlands' citrus district and those of other districts in Southern California as well, because of the manner in which some of the oranges are marked this year, fine thin lines running through the skin that throws the fruits, although of finest quality, into the second grade.

"'It is a new one on us,' said one of the packers yesterday, 'for it is not a thrips mark, and I don't know what it is. It is not very serious, because only a percentage of the fruit is marked that way, but this year when prices are going to be so good, it seems a shame to throw fruit into second grade because of such marks, but it must be done.'

"Reports from other sections show that the fruit there has been marked the same way. Some one has suggested that the markings may be the result of the war and the thousands of tiny lines represent the lines of the Allies."

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Questions and Answers

ANSWERS BY EDITOR AND STAFF

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Princess Papershell Almond

What can you tell me of the Princess papershell almond? Are there any plantings in this state?—Inquirer, Los Angeles.

This question was referred to Claud D. Tribble of Elk Grove, and he writes:

"We believe this variety is not used any more. It is one of the very finest almonds, with fine white shell and long, white, sweet kernel, but owing to its very shy bearing is no longer used. Looking over a number of late nursery catalogues we do not find it listed any longer. We understand that there are a few of these old trees at Antelope, Guinda, Corning and Orland. Our informant says he does not know names of parties having these trees but that the nuts were sold through the respective associations. Prof. R. H. Taylor of the University of California, Berkeley, could give more information in regard to this, or Mr. Tucker, president of the California Almond Growers' Association of San Francisco should be able to give useful information."

Raising Rabbits

Please state the best way of raising Belgian hares. What are the best feeds for growing rabbits; also for fattening them? Are there any weeds poisonous to rabbits? If so, please tell me what they are.—Subscriber, Gonzales.

An answer to such a question calls for volumes; it has been referred to a practical rabbit grower, W. D. White, and he gives a few hints:

Rabbit raising is an industry, a business, and success comes only as one puts into it sound practice of business principles. To give full instructions in this one article is impossible, so for further study and instruction we recommend some good rabbit guide, such as we gave in answtr to "Rabbit Questions," on Page 604 of the Cultivator of December 14. As to feeding: Plain alfalfa hay free from dust or smut and good clean rolled barley are necessary. To these may be added green feeds, roughage and concentrates. In green feeds do not give any buttercups, nightshades, tops of potatoes, meadow horsetails, rhubarb, onions or frosted roots or any feed from dusty roadsides. Dandelion, lettuce and kale should be fed sparingly. Carrots are good; chicory fair; hogweed good; pea vines (if dry) good. Potatoes must be cooked. Use judgment in all feeding to animals kept in confinement, as that which they might eat at will if loose, they will overeat of oftentimes when confined, and herein is danger.

The secret of growing rabbits is to keep them growing all the time. Each pen needs different treatment, as much depends on the mothers nurse and weather conditions. Would suggest a study of this point at length in one of the books aforementioned.

For roughage use any of the wild hays properly cured; oat or wheat straws cut in the milk and cured are good. These may be mixed with the alfalfa hay and thus vary the menu. Concentrates, such as oats, corn and various mixtures of bran, oil cake, beet pulp, soy bean meal, are to be used as conditions demand. The writer would be glad to reply at further length in the further study of any of these points through the columns of this paper if desired.

Curing Dates

Please tell me how dates are cured, or are they left till soft on the tree? I have some ripening and if I let them stay on until soft the birds get them. If I pick them they dry up without ripening.—Subscriber, Bostonia.

The artificial ripening or incubating of dates at harvest depends upon the variety. There are some of the hard sweet dates which cure naturally on the tree, but the soft varieties present a more difficult problem. Director Forbes of the Arizona experiment station recommends that the fruit be gathered by the bunch before the fruit begins dropping, also before it is attacked by insects, mold or bacteria. They are usually cured by being confined in chamber or incubator and subjected to moist heat. However, we note in Swingle's "Date Palm": "Usually the whole bunch is cut off and hung up in dry shady place. Remove any dates which have begun to spoil." This matter of ripening has called for a bulletin issued by the Arizona experiment station, which we think will be sent to Californians if postage is forwarded to Agricultural Experiment Station, University of Arizona, Tucson. The bulletin treats on "Chemistry and Ripening of the Date," by A. E. Vincent and "Ripening Dates by Incubation" by G. F. Freeman.

Castor Bean Contracts

What will be the attitude of the government regarding contracting for next year's castor bean crop; also what are other marketing possibilities?—Subscriber, Arcadia.

This matter was referred to Henry S. Gane of the California Castor Bean Association, and Mr. Gane writes: "The war department has positively announced that it is not in the market for castor beans the coming season. As far as selling them commercially is concerned, we are not able to make an announcement at this time. We are taking the matter up with some of the large castor oil producers in the United States to see if we cannot turn over next season's crop for the members of the association or others who care to join us. As soon as we know definitely, we will be pleased to advise you. The buyers, however, can not state anything definite until they know how much the war department will need for their own use. We personally believe that the price will be much lower than what the government is now paying, which is $4.50 a bushel of 46 pounds."

Nitrate of Soda on Apple Trees

Some time ago I saw an article in your paper, on spraying fruit trees with a solution of nitrate of soda, to keep the fruit from falling. Could you kindly give me the formula, as I have lost the paper? We enjoy the Cultivator very much. Thanking you for your many helpful suggestions.—Subscriber, Redlands.

The formula recommended by Messrs. Ballard and Volck and given in the Cultivator of March 26, 1914 is as follows: Nitrate of soda, 50 pounds; caustic potash, 7 pounds; water 50 gallons. At Watsonville the spraying was done on February 2; all twigs were drenched with the spray, about seven gallons of solution being applied to each large tree. Report states: "April 7, 1912. Trees in row sprayed, well in bloom, while those in check row adjoining show only occasional flower."

Evaporation of Water Under Varying Conditions

Written for California Cultivator By J. B. Neff

BULLETIN NO. 177, Office of Experiment Stations, shows that the loss by evaporation from very wet cultivated soils may amount to four inches per week, or twice that from standing water. The loss from soils wet enough in the top layer to produce vigorous orchard growth is about one inch per week, or half that of an exposed water surface. Soils that are fairly dry on top lose about one-quarter inch per week.

Where the temperature is high small amounts of water applied to the surface at frequent intervals and without thorough cultivation are of little benefit, and the evaporation may exceed nine-tenths of the entire amount of water applied. Stirring or turning soil that is not well pulverized may increase the loss by evaporation. The character of the soil does not seem to have much influence on the rate of evaporation.

The loss of water by evaporation can be checked by the application of the water in such a way as to keep top soil comparatively dry. This places the water beyond the influence of the wind, and to a considerable degree beyond the influence of high temperatures, as the daily variation in temperature almost disappears at one foot below the surface.

Records show that the difference of temperature between dry soil in the shade and dry soil in the sun is sometimes 50 degrees and that the average in summer is about 35 degrees. When the thermometer stands at 90 degrees in the sun, the temperature of dry soil in the shade will be 85 degrees, and of dry soil in the sun 135 degrees.

Cultivation after irrigation has the effect of checking evaporation since loose earth is a poor conductor of heat. It is also shown that in extreme cases a difference of 10 degrees will be found at a depth of one and a half inches, between compacted and loose soils.

The experiments on water surfaces showed that decreasing the temperature from 88 degrees to 80 degrees reduced evaporation 20 per cent; reducing temperature to 73½ degrees reduced evaporation 40 per cent; at 61 degrees the decrease was 67 per cent, and at 53 degrees the evaporation was 85 per cent less than at 88 degrees. That is reducing temperature 7 degrees decreased evaporation one-tenth inch per day. The proportionate saving from soil surfaces is probably the same as from water surfaces, and shows the necessity of applying the water deep in the soil, and of frequent cultivation.

When 12 inches depth of water was applied to the soil it was found that 1.65 inches evaporated the first five days. At that time half was cultivated. During the next six days the loss from the uncultivated soil was 1.38 inches, and from the cultivated soil .63 inches, saving .75 inches in the six days by cultivation. When less water was applied the cultivation could be done sooner and a smaller percentage lost by evaporation.

Soil receiving water enough to cover it 3.14 inches deep lost as follows in 14 days: With no mulch, .72 inches; with a four-inch mulch, .21 inches; with an eight-inch mulch, .1 inch; with a ten-inch mulch, .03. These mulches were dry soil placed on the watered soil and give better results than can be had in a field, but show that large savings can be made by proper cultivation.

When 5.19 inches of water was applied on the surface the loss in ten days was 1.11 inches. When applied in three-inch furrows the loss was .99 inches; in six-inch furrows the loss was .94 inches; in nine-inch furrows the loss was .82 inches, and in 12-inch furrows .63 inches.

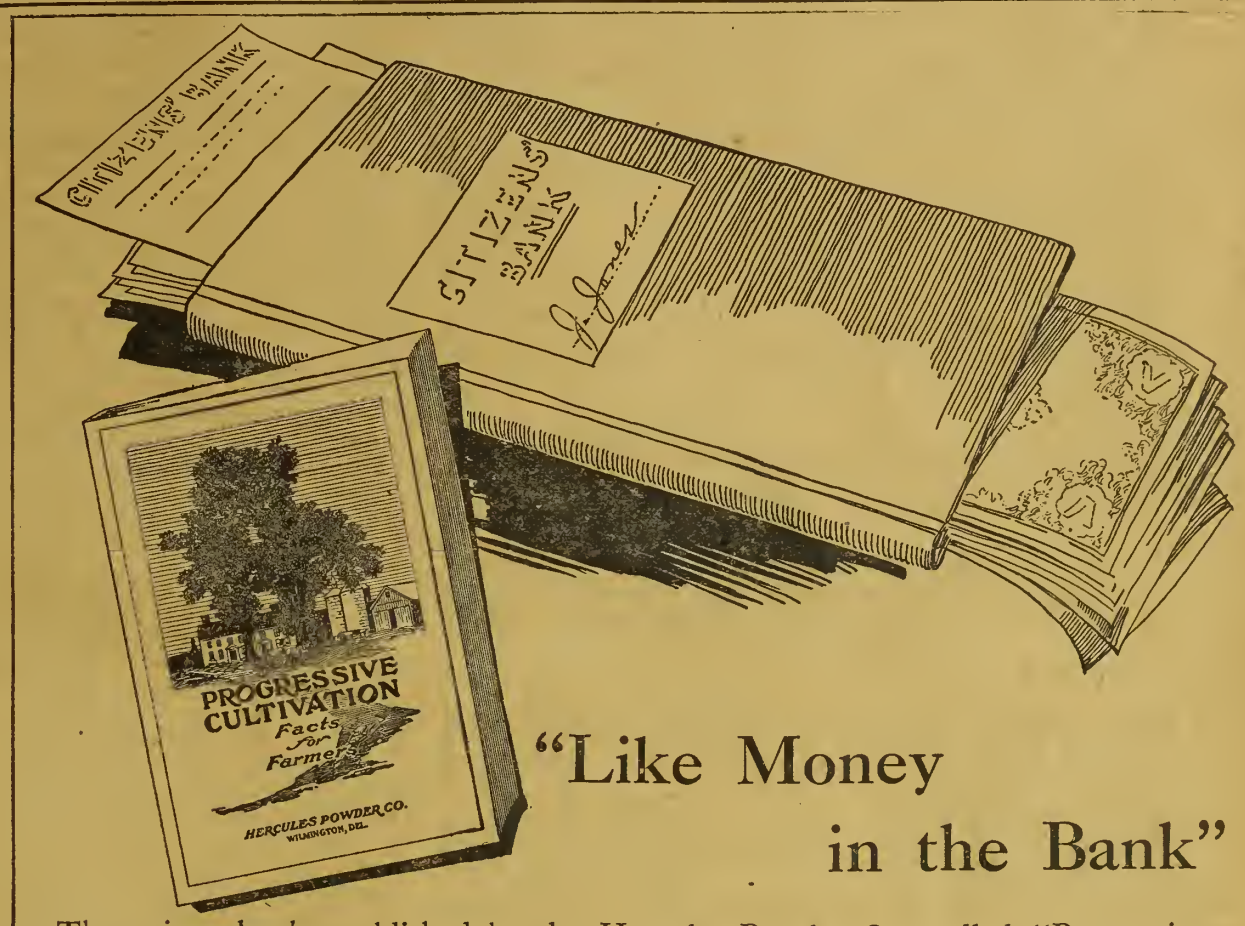
The soil in each case was cultivated to a depth of four inches on the third day. Other experiments as to different depths of water showed approximately the same results.

The experiments show a saving in a six day period by cultivation of 6¼ per cent of the water applied, and a saving of 9¼ per cent in a ten day period by using 12-inch furrows in addition to the cultivation.

A point very forcibly brought out is the large loss when water is applied in frequent light irrigations. Unless the nature of the soil and crops requires such irrigations, much water can be saved by using larger amounts and less often.

The experiments were made in the vicinity of Riverside, and the soil is described as follows: A sandy loam of good texture, more or less micaceous and granitic in origin. The soil is, throughout the tract, underlaid by a highly micaceous and more or less gritty loam at depths varying from two to five feet. The grit consists of small fragments, partly granitic, with its mineral still intact, and of single grains of feldspar and quartz loosened from the rock by weathering agencies. Still deeper down this mixed loam and grit is underlaid by a bed of almost pure grit of the same character, and reaching in places many feet in thickness.

The man who says his childhood was the happiest period of his life must be missing a lot of fun.—Cottrell's.



"Like Money in the Bank"

There is a book, published by the Hercules Powder Co., called "Progressive Cultivation". It tells you of all the various uses of explosives on the farm and will be sent free to any farmer who fills out and mails the coupon printed below. This book has been of invaluable service to farmers and orchardists who are anxious to get from their land a maximum of yield with a minimum of labor and expense.

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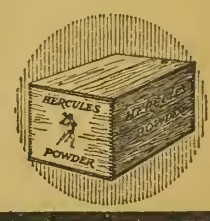

A Letter from Bossy

Dear Folks, I want to tell you how much better I feel since taking Kow-Kure—I give many times more milk and I feel as fit as a fiddle.—Bossy

If a cow could speak she would talk about her health as people do—because cows suffer from ailments, little and big, the same as human beings. When a cow is sick, she needs medicine as much as a sick person does.

Mere rationing will not eliminate disease; medicinal treatment is necessary. The most common cow ailments, such as Abortion, Retained Afterbirth, Lost Appetite, Bunches, Scours, etc., result from a diseased condition of the digestive or genital organs. Any of these diseases and many others can be successfully treated or prevented by using Kow-Kure, the great cow medicine.

Kow-Kure is scientifically prepared for the treatment of cow diseases only. It puts the vital organs in condition to eliminate disease and function regularly. Prevent sickness by occasionally using Kow-Kure. Feed dealers and druggists sell it—60c. and $1.20 packages.

Free book, "THE HOME COW DOCTOR," sent on request.

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Feeding Systems in Winning Herds

BULLETIN No. 301, by Prof. F. W. Woll, just issued from the University of California press, contains complete data of the California state dairy cow competition. Much of the data has appeared from time to time in the columns of the Cultivator. One of the features of the bulletin, aside from the very valuable data contained therein, are the statements by the owners of the winning cows regarding the systems of feeding that proved successful. Believing that the stories of these successful dairymen will be of interest and value to our readers we quote as follows:

J. W. Coppini, Ferndale.—At the first inception of the California State Dairy Cow Competition, I fully realized the object and benefit to be derived from it, and decided to enter every cow in my herd.

About two months before entering, my cows were put dry and fed as follows: All the mixed rye grass and clover hay they would eat up clean, together with a liberal ration of beets, and about three pounds of grain or dried beet pulp, as I happened to have on hand.

After freshening, the grain ration was increased to four or five pounds per cow daily. During the spring and early summer months green cut grass was fed in the barn during milking, and later, as the grass became short, oxheart carrots were gradually substituted, and later beets and hay during fall and winter months. They were milked twice a day and pastured the year round; kept in the barn at night in the winter and also in the day time when real stormy. Plenty of bedding was always provided.

Guy H. Miller, Modesto.—At the beginning of the contest, the cows were being fed a molasses dairy feed. A little later a ration composed of three parts crushed barley, two parts shorts and one part linseed meal was substituted. For the first month it was fed with a small amount of beet pulp. As the cows did not like beet pulp very well, it was discontinued December 1. The cows were fed alfalfa hay and the above grain mixture up to April 1, 1917. We then began feeding the first cutting of alfalfa and foxtail green as part of the night feed. About the first of May crushed barley alone was substituted for the former mixed ration. The ration then was crushed barley and alfalfa hay, with green alfalfa as part of the night feed. In July crushed oats was mixed with the barley, half and half. The alfalfa hay and alfalfa soiling was continued as before.

On August 1, the oats were left out of the ration, alfalfa hay continued, and green kaffir corn was given in the night feed. This ration was continued until September 10, when we ran out of kaffir corn. Alfalfa hay and crushed barley and oats were fed, in the proportion of two parts of barley and one part oats, to September 25. The cows were then turned out a part of each day to pasture off what was left on the alfalfa fields in the way of green feed, haying being over on account of short irrigation season. The cows were pastured about two weeks, receiving alfalfa hay in the morning and a light feed of the same at night, the grain ration of oats and barley being continued. Pasture was discontinued October 10 and cows were then on dry feed entirely. October 22, as the price of barley and oats had soared out of reason, we turned to molasses dairy feed for a concentrate. This dairy feed is supposed to consist of one-third each of molasses, crushed barley and "dairy chop." This ration of alfalfa hay and molasses feed was continued to the end of the contest.

The ten cows that won the second herd prize were fed 20,677 pounds of concentrates during the 504 days they were in the contest, an average of 6.8 pounds per day, the largest average amount of concentrates being given to Goldie of Venadera, 10.2 pounds, and the smallest amount to Martha of Venadera, 3.6 pounds.

The cows were fed and milked twice daily throughout the contest, with the exception of Lorita of Venadera, one of the older cows that now leaks her milk very badly. She was milked three times daily for six weeks, but as she seemed to leak just about the same, her three times milking was discontinued. When not in the barn night and morning being fed and milked, the cows ran in a corral adjoining the barn at all times, except the two weeks they were pastured a part of each day. There is a closed-in shed in connection with the corral for protection during bad weather.

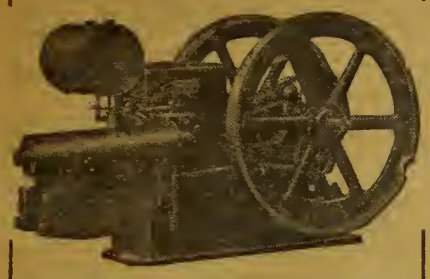
A. W. Morris & Sons Corporation, Woodland.—Miss Valley Mead De Kol Walker was milked four times a day during the first four months and three times a day during the last six months of the record period. Her grain ration varied from ten to eighteen pounds a day, consisting of equal parts of ground barley, ground oats, and wheat bran, with one to two pounds cottonseed meal and two to four pounds soy bean meal. A little linseed meal was fed in place of the above concentrates at times. Her roughage consisted of corn silage during the winter, about 15 pounds once a day, and five to ten pounds of dried beet pulp a day. She also had fresh beets during part of the test, which were fed in place of the silage. In addition to this, she of course had what alfalfa hay she would clean up. The above feeds were varied in amounts according to the cow's appetite for them. She was kept in corral and box stall and fed at each milking.

The other cows were handled in the same manner, and their rations consisted of the same feeds, varied in amounts according to the production and peculiarities of the cows. These other cows were milked three times a day and were kept with the herd and given a light feed of rice bran, wheat bran and beet pulp.

Iver Iversen, Arcata.—During the months of April, May and June, my cows were fed green clover pasture, green oats and vetches in the barn, twice daily, and also four pounds of a mixture of wheat, cocoanut meal and cottonseed meal, daily per cow. In July and August they were fed green peas and clover pasture, and also four pounds grain. During September, October, November they were fed green Indian corn (Yellow Dent), carrots (120 to 150 pounds per cow daily), and six pounds mixed grain as above mentioned. During the months of October and November they were also fed 10 pounds alfalfa hay per cow. From December 1 to March they were fed from 125 to 150 pounds beets per cow daily, with six pounds grain feed and ten pounds alfalfa hay.

F. Stenzel, San Lorenzo.—The cows that were entered in the competition were fed like the balance of the herd. The daily rations fed until March 15, 1917, were 50 pounds wet brewers' grains, 10 pounds dried beet pulp, one pound linseed meal, with alfalfa hay and mangels. About 60 pounds fresh cut green alfalfa was fed March 15 to November 10, and after that time about 35 pounds of alfalfa hay was fed daily per head. On account of the high price of mill feeds we left them out of the ration entirely. This was very likely a mistake, for by adding a small amount of mill feed, the result in the competition might have been different, especially in the case of Alice. Another thing that worked against the best result was a change in the milker and feeder during the competition period. The first six months the cows were milked three times a day and cared for by a competent, careful man. After he left they were milked twice a day by an inexperienced feeder.

Witte Irrigating Engines



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Live Stock News Notes

Cattle at $50 per Cwt.

The champion carload of steers at the recent International — yearling Herefords from the S. M. S. ranch in Texas, fed by J. W. Frazier of Illinois—sold for $50 per cwt. They averaged 1126 pounds. It is interesting to note that these steers were dropped on the range and demonstrate in a powerful way the possibility of improvement of range stock through wise use of pure bred bulls.

Fewer Cattle to Feed Lots

Figures compiled by the bureau of markets show material increases in the number of stocker and feeder cattle shipped from 26 markets in 1917 and 1918, as compared with the number shipped from the same markets in 1916. The shipments from these markets during the first eleven months of 1918, however, showed a decrease of 139, 044 or 3.3 per cent, as compared with the first eleven months of 1917, but an increase of 16.6 per cent over the 1916 shipments. The most noticeable decrease in 1918 as compared with 1917 was during November, yet the shipments during November, 1918, were 53 per cent greater than the shipments for November, 1916. March, April, May and August shipments in 1918 showed an increase as compared with shipments during the same months in 1917.

Voorhies to Return

Dairymen of this state will be interested to know that E. C. Voorhies, formerly assistant professor animal husbandry in the University and who now holds a commission in the army, will return soon and take up his work in the dairy division at the University farm.

A Hereford Sale at San Francisco

Joseph E. Painter, general manager of the California International Live Stock Show which will be held at San Francisco early in February, states that a sale of Hereford cattle will be held during the show regardless of the recent decision of members of the Pacific Coast Hereford Breeders Association to hold their annual sale at the University farm later in the season.

George Wendt with Henderson Co.

George Wendt, known throughout the West as a most capable Holstein farm manager, is now in charge of the big Henderson Company herd at Sacramento. This herd has a wonderful lot of highly bred heifers close to freshening and under the new management these will be fully developed.

Holmes Holsteins Doing Well

R. L. Holmes, Modesto, recently completed a number of good records with his registered Holsteins. An especially pleasing one was made by Penopa Lockhart 2nd, a junior three year old, who made 23.39 pounds butter in seven days. She is a highly bred heifer, being by Sir Rag Apple Korndyke and out of the 25.56 pound dam Penopa Lockhart.

A Fine Showing from Higdon

Tulare Holstein Farm, owned by W. J. Higdon, Tulare, is contributing some fine records to California Holstein development right now. The five year old cow Pauline Soldene De Kol 3d heading the list with 30.84 pounds butter and 576.1 pounds milk in seven days. Mona Fobes, a senior four year old daughter of Mutual Fobes Longfield De Kol, made 26.61 pounds butter and 523.8 pounds milk in seven days, 109.63 pounds butter and 2325.3 pounds milk in 30 days. The five year old cow Troutbrook Pontiac Starin made 26.51 pounds butter and 571.1 pounds milk in seven days and 110.32 pounds butter and 2367.1 pounds milk in 30 days.

Mitchell Holsteins on Test

Black Patti, a splendid registered Holstein cow owned by Walter F. Mitchell, Visalia, is on official test and has 26.11 pounds butter to her credit in seven days and is milking above 90 pounds per day. Jennie Wren, a junior four year old in the Mitchell herd, has over 21 pounds to her credit in seven days and is still on test.

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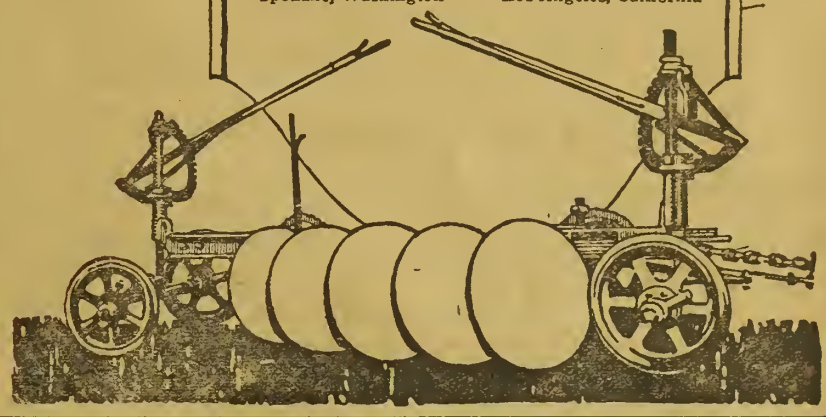

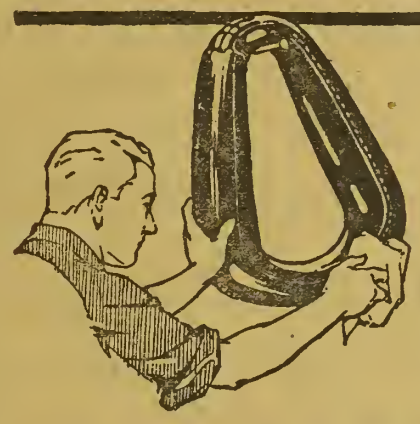

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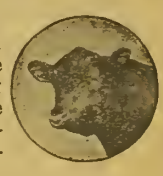

Aberdeen-Angus won Grand Championships over all breeds on SINGLE STEER, Steer HERD, CARCASS and BOYS' and GIRLS' Calf, losing only Fat Carlot (first time since 1909). The interbreed Grand Championship standing of the world's greatest show is now 11 out of 17 for Single Steer, 12 out of 15 for Steer Herd, 13 out of 17 for Fat Carlot, and 16 out of 17 for Carcass, in favor of the Aberdeen-Angus. Write for "Results of Internationals."
ABERDEEN-ANGUS: First in War, First in Peace, First in Reconstruction!

American Aberdeen-Angus Breeders' Association
817-CC Exchange Ave., Chicago

HEREFORDS

ALAMO HERD
(Founded by the Late Gov. Sparks)
Registered Herefords
Herd and range bulls reasonable. Largest Hereford herd in California.
W. D. DUKE, Likely, Modoc Co., Cal.

Hereford Farms
Geo. Watterson, Owner
Bishop, Inyo County, Cal.
Anxiety, Repeater, and Bonnie Brae breeding. Bred and raised on mountain range.

N. W. Thompson Imported and American Bred

Percheron, Belgian and Shire Stallions

My new shipment of Stallions has arrived consisting of Percherons, Belgians, and Shires personally selected by me from the best breeding sections of Iowa, Illinois and Indiana.

Two, three and four year olds that weigh a ton or better. The heavy boned, clean legged kind with lots of style and action.

The largest collection of high class Stallions west of the Rocky Mountains.

Prize winners at this year's big Eastern shows. Life Insurance and State Certificate of Soundness furnished with every horse. If in need of a really high class Stallion come and inspect my horses or write for full particulars. I can suit you in price, quality, and terms.

N. W. Thompson

Patterson, Stanislaus Co., Cal.

Ranch Adjoins Town

CALIFORNIA CHAMPION HAMPSHIRES

As good as the best and better than the rest. A boar or a sow pig sired by my great herd boar Director, and out of one of my choice sows will add prestige to your herd. I am booking orders now for the pigs of March and April farrow. Write now and place your order.

L. A. DENKER

Boquet Canyon **Saugus, Cal.**

Buy Durocs Now

From the Uneeda Glenn County herd because this herd produced more champions and other prize-winners at the 1918 California and Oregon State Fairs than any one herd on the coast.

We now offer young boars and gilts, bred gilts and bred sows, representing the choicest blood lines of the breed. Our prices are reasonable and every animal is sold on a guarantee.

You can't go wrong on our kind.

H. P. Slocum and Son

Willows, California

PILLING *Easy to use* **Best Made Last Longest**

Cattle Instruments

Your dealer's stock has probably been exhausted during the war while the Pilling Factory was working 100 per cent on Government contracts for surgical instruments for our troops in France. But before Spring we will be able to supply dealers who order early. To be sure of getting the genuine Pilling Instruments put in your order now.

Case No. 2 contains $3 milk fever outfit and 8 other "Easy to use" Cattle Instruments. $15 VALUE complete with "Easy to use" directions for $10 PREPAID.

FREE BOOK 48 pages, shows treatment for milk fever, bloat, garget, hard milkers, etc.

G. P. Pilling & Son Co. 2234 Arch St. Philadelphia, Pa.

Sir Aaggie De Kol Acme 2nd

Five of his seven nearest dams average:
Milk one year....24,089.88 pounds
Butter ..... 1,105.07 pounds
This butter average is equalled by only one other bull of service age in the world. Buy your next bull from

Eldorado Herd

Alex. Whaley, Owner **Tulare, Cal.**

Creamcup Holsteins Headed by the 33.92 pound bull Creamcup Champion Pontiac Burke. A few young bulls for sale. **M. M. HOLDRIDGE, Rt. A. Box 437, San Jose, Cal.**

When writing advertisers, mention The Cultivator.

The Tagus Ranch Sale

Widely advertised as "America's Greatest Farm Auction Sale," the Tagus Ranch sale at Tulare completely fulfilled every claim made for it and will go down in public sale history as one of the greatest events of its kind.

The sale was scheduled to extend over four days but the addition of large numbers of animals and implements not listed carried the sale over an extra two days.

Opening on Tuesday, December 10, the sale went on continuously until the afternoon of Sunday, December 15, when the last carload of beef cows was sold.

Col. Ben A. Rhoades of Los Angeles gave an exhibition of salesmanship and endurance in this sale that has unquestionably never been equalled in America. He occupied the block during every minute of the six days of selling, and finished with as clear a voice and as genial a manner as on the forenoon of the first day. His work was one of the big topics of conversation among the thousands of visitors who attended the sale during the week.

The arrangement and management of the sale was handled personally by Charles L. Hughes, Sacramento, who again demonstrated ability of a high order. Under his management, from the advertising prior to the sale down to the final accounting, the big sale moved smoothly and rapidly, without a single hitch.

A feature of the event was the presence in the box during a portion of the sale of Mr. Hulett C. Merritt, multi-millionaire owner of Tagus Ranch. His keen comment on animals and implements going under the hammer frequently livened the proceedings.

Harold B. Rhoades acted as ring man throughout the sale and made an excellent impression by the cleverest and fastest ring work he has ever done.

The first day of selling disposed of the registered Holsteins, the 80 head bringing upwards of $18,000.

On the second day 200 head of registered Duroc-Jersey hogs were sold, including about 40 suckling pigs, for upwards of $11,000, or an average of over $65 for the 160 lots sold. This was a very satisfactory average considering the large number of spring and summer pigs in the lot. A selling record was set when the entire herd went under the hammer in exactly four hours.

The top animal was the great young boar Orion's Golden Col. that fetched $675. Next high boar was California's Defender, that sold for $450. The high sow was Crimson Queen, a daughter of Slocum's Crimson Wonder, that went for $520.

The heaviest buyer of Durocs was G. W. Emmons, Oakland, who secured the two top boars and a choice lot of sows and young stuff.

The sale of registered stallions and mares was the most successful ever held in California, although many of the top animals sold far below their real value. The top price was for the Belgian stallion Cadet, who sold for $2100; next the Belgian stallion Adonis at $1900, and next the Percheron stallion Paulus of Paicines at $1450. Belgian mares sold up to $505, for a two year old filly, and Percheron mares and fillies up to over $500, with an average of over $300. W. Mayo, Newhall, and E. L. Cebrian of San Francisco were prominent among the buyers of registered Percherons and Belgians.

The Angus cows and bulls were widely scattered to many buyers but sold at very moderate prices.

The implements sold briskly, the 15-35 Sandusky tractors averaging around $1800, and other implements finding keen demand. It was necessary to carry the implement sale over until Saturday and only a comparatively small crowd showed up that day. As a result some of the special bean and beet implements were not brought in.

The sale was held in a big tent, into the arrangement of which Sales Manager Hughes had introduced some original and satisfactory ideas, permitting the buyers plenty of opportunity to see in plain view every item offered.

Complete totals of the sale show over $135,000, which sets a new Pacific Coast record.

Mr. Merritt donated the lunch for the entire six days of sale to the Red Cross, and something over $500 was netted for the good cause.

Winter Brood Sow Management

With every prospect for a continued strong demand for pork products it will be to the advantage of every hog producer to take such care of his brood sows as to insure strong litters next spring.

Practically all sows have been bred—or will be shortly, and the care accorded the sow from now on until farrowing time will determine very largely the value of the litter.

There are three very common mistakes made in brood sow management. They are either permitted to get too fat; are allowed to become run down; and are not forced to take sufficient exercise. Proper feed and exercise are absolute essentials.

It is a mistake to allow sows to become over fat. There is little question but that fat affects the fecundity of a sow—resulting not only in smaller litters, but very often the pigs come lacking vitality. Then too, an over fat sow is very apt to be clumsy in taking care of her pigs. A greater mistake is to allow the sows to become thin and run down. Such sows can not properly develope strong litters, and after the pigs are born the drain of nursing is extremely heavy.

The more one studies the live stock game the more he becomes convinced that the greatest factor in success is common sense and good judgment. The care of the brood sow should be along common sense lines and the condition in which they are maintained should be dictated by good judgment.

In feeding a brood sow the fact that the sow is doing double duty should not be lost sight of. Young sows must be kept growing, and mature sows should be maintained in reasonable flesh, while they are devolping the litter. The kind of ration required by the pregnant sow is one furnishing plenty of protein—needed for tissue building. In this state question of supplying protein is largely solved through a wide use of alfalfa. However during the months when alfalfa pasture is not available it is usually advisable to furnish some protein concentrate, such as tankage, oil meal, shorts or middlings, bran, etc. The amount of concentrate required can be very materially reduced by feeding alfalfa hay or alfalfa meal. The principal difficulty in feeding alfalfa

Warranted to Give Satisfaction

Gombault's
Caustic Balsam

Has Imitators But No Competitors

A Safe, Speedy, Positive Remedy for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs and Lameness from Spavin, Ringbone and other bony tumors. Cures skin diseases or Parasites, Thrush, Diptheria. Removes Bunches from Horses or Cattle.

As a Human Liniment and Antiseptic for external use it is invaluable.

Every bottle of **Caustic Balsam** sold is warranted to give satisfaction. Price $1.75 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

The **JERSEY**

THE Jersey is famous for the little money it costs to keep her compared with the big yield she gives in return. Owning a Jersey is like having money invested with sure interest. It has required 200 years to develop her perfection—to-day she is supreme. Write breeders for prices and pedigrees and let us give you valuable facts, *free*.

The American Jersey Cattle Club
322 West 23rd Street New York City

Jersey Bull
FOR SALE
A fine straight one, bred right, priced right
S. F. WILLIAMS
ORLAND, CAL.
Member Orland Jersey Cattle Club.

Venadera Herd
REGISTERED JERSEYS
Young bulls from proven dams in Register of Merit
GUY H. MILLER
MODESTO, CAL.

ALL MY RECORDS
are made under ordinary dairy conditions. The farmers cow is
The Jersey
YOUNG BULLS FOR SALE
C. D. HAYWORTH
MODESTO, CAL.

Young Jersey Bulls
FOR SALE
One at the head of your herd will pay big dividends on his cost. Write to
W. J. HACKETT
MODESTO, CAL.

Get One of My Jersey Bulls
to increase the production of your herd. They are rich in the blood of the great cow, Gertie of Glynllyn.

Visitors Welcome Correspondence Invited
A. A. Jenkins
R. R. Box 46 *Tulare, Cal.*

Brighton Farm Herds
Registered Shorthorns
and
Berkshires—Both Sexes
H. L. & E. H. Murphy
Perkins, Cal.

4 Duroc Jersey 4
BOARS
Open and bred gilts; also weaned pigs for sale. Fair Prize Winners. Write
W. M. Way Modesto, Route 1, Cal.

hay is to get the sows to eat enough, and for that season it is well to feed some additional protein concentrate.

Any of the following rations will prove satisfactory, and the choice should be based on local cos . The amount to be fed will be governed entirely by the condition of the sow and her individuality—the aim being to keep her in strong, vigorous condition—not fat.

Barley, oats and shorts, equal parts by weight.

Barley and shorts or middlings, half and half, by weight.

Barley nine parts, tankage one part. If mill feeds are scarce a ration of three-fourths barley and one-fourth alfalfa hay or meal should give satisfactory results. A ration of wider variety can be had by feeding barley 10 parts, shorts or middlings, five parts, bran three parts, oil meal or tankage one part. Most hog men would prefer to feed these rations wet, and if skim milk is available its addition would greatly improve them. A few roots can be fed to advantage. Many feeders add beet pulp to their brood sow rations, thus adding succulence and increasing the bulk somewhat. The barley should always be fed ground or rolled. For practical purposes corn or milo can just as well replace barley.

Care should be taken that at no time do the sows become constipated.

Exercise is absolutely essential and insures stronger litters and better conditioned sows. Sows on pasture will usually take sufficient exercise, but when kept in a dry lot they usually have to be forced to take the needed exercise. If the lots are so arranged that the sleeping quarters are at one end and the feed troughs at the other the sow will be compelled to walk. It may be necessary to drive them short distancees.

Feed wisely, but not too heavily—and see that the sows have exercise.

NECROBACILLOSIS

Reports come from Illinois of the treatment of a hog disease known as necrobacillosis. Other names for it are canker sore mouth, bull nose, etc. Affected pigs are runty and unthrifty—they simply won't do well, but the disease is not fatal like hog cholera. It is reported that rarely more than a quarter of a herd succumb to the disease.

I think there has been some of the disease in the Sacramento Valley, and where affected pigs have been killed and destroyed it has generally been considered more profitable than to bother with them.

There is a serum treatment for the disease, however, and it is very satisfactory, according to the report received. The cost is 50 to 75 cents per pig. Sometimes two treatments are required. For best results it is advised to treat before the disease has made much headway.

I know of one lot of pigs that got "dumpy" and sort of "dopey"—had bleary eyes and running noses and a little fever. The owner thought it might be a type of chronic cholera and gave them a big dose of serum. This did not do any apparent good. The pigs lived but did not make any growth.—W. S. G.

FEED REQUIRED FOR RAISING DAIRY HEIFERS

The bureau of animal industry reports that the dairy division in an experiment conducted at the experiment farm, Beltsville, Md., found that the feed necessary to raise five dairy heifers for one year averaged 125 pounds of whole milk, 2420 pounds of skim milk, 889.9 pounds of grain, 568.3 pounds of alfalfa hay, and 4411.9 pounds of corn silage. At birth the average weight was 79 pounds, and at one year the weight had increased to an average of 520 pounds. The grain mixture used consisted of 375 pounds of corn and cob meal, 200 pounds of wheat bran and 100 pounds of linseed oil meal.

PURE BRED REGIST'D HOLSTEINS

Tuberculin Tested State Supervision Individuality Breeding Production Butter Fat Everything Guaranteed

King Korndyke Pontiac
(shown above)
by every right of inheritance should transmit great production and high class type. His sons and daughters have already proven his ability to transmit type of the first rank—daughters with the big, deep bodies and the ample, fine textured udders that go with large dairy production. As for his sons, one of them sold for $6500.00 at public sale, going to head W. J. Higdon's fine herd at Tulare.

Two daughters of King Korndyke Pontiac recently freshened in our herd and made very satisfactory records. King Korndyke Pontiac Charlotte, under official test made 22.92 pounds butter in seven days as a junior three year old. Natoma Superba Pontiac, freshening at two years four months, made 19.25 pounds butter in seven days. We have several other of King's daughters to freshen this winter and they look especially promising.

You need one of his young sons in your herd. Come and see what we have on hand or write for pedigrees and prices. We make liberal terms if desired.

Prince Gelsche Walker Kornkyke
(shown below)

JANE GARDEN FARM
SACRAMENTO — CALIF.
FRED W. KIESEL, PROP'R. C. W. YOUNG, SUP'T.

Briggs

"He Has Developed Wonderfully"

Is the universal statement of all who saw our great junior herd sire

King Korndyke Pontiac 20th

when we bought him as a calf, and who again saw him out on the show circuit this year, where at California State Fair he was defeated in class only by the twice grand champion bull.

The way he is deepening and lengthening out, and the splendid vigor which he possesses, are most pleasing to us, as he is doing even a little bit better than we expected of him.

And his first calves that are now coming are certainly beauties. It is not too early to begin to figure with us on one of his young sons for your herd. Come and see them or write for description and price of one.

NOTE: We are selling some choice, highly bred cows and heifers bred to King Korndyke Pontiac 20th in the Tulare Sale, November 20-21.

Our Entire Herd is Tuberculin Tested

Tulare Holstein Farm
W. J. Higdon, Owner TULARE, CAL. H. L. Redd, Herdsman

Santa Anita Rancho
Anoakia Breeding Farm
REGISTERED HOLSTEINS
A herd of fine individuals, strongly bred in the lines of great production as evidenced by both short and long time records, handled in a manner to produce sound, healthy breeding stock.

Merci Lad Korndyke Burke
Son of De Kol Hengerveld Burke who has a long list of A. R. O. daughters with records up to over 35 pounds butter in seven days, and out of Winnie Korndyke Cornucopia De Kol who made 31,034.1 pounds milk in one year and was the first cow in California to make over 1200 pounds butter in one year. A few of his good sons out of excellent dams for sale.

SANTA ANITA RANCHO *Santa Anita, Cal.*
Anita M. Baldwin, Owner *W. H. Taylor Supt.*

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FARM LANDS FOR SALE

Seven and one-half Acre Prune Orchard for sale. 1 mile from Sonoma City, soil rich, black loam, no adobe, never packs; trees are in A-1 condition; family orchard near house which furnishes fruit from June 1 to Xmas; tank house; new engine; well 300 feet deep; plenty water; barn; beautiful grounds; shade; good 8 room house well built; $2000 crop this season; next to state highway; price $10,000; $6000 cash lowest figure; no exchanges. Box 125, Sonoma City, California. Trays and dipper.

For Sale — One of the Big Producing Ranches of California, income from $20,000 to $25,000 per year. Will sell land, crop, work stock, cows and farming implements for $60,000. Small cash payment to apply on personal property, balance about one-half of the value of crop. Might accept clear Los Angeles residence or income, apartment house or small grove as first payment. Address W. B. Ames, Jonathan Club, Los Angeles, California.

For Sale—400 acres, improved ranch, 7 miles south of Tulare, ¼ mile from State Highway. Fairly good buildings, excellent pumping plant with shallow lift, 95 acres alfalfa, 100 acres grain land, balance pasture, but can all be plowed, $90 per acre. Beckwith & Anderson, Tulare, California.

Wanted To Sell, trade or exchange 80 acres of alfalfa land in Imperial Valley, for a dairy having 60 to 80 cows, together with lease on place to keep them. Address Frank C. Dias, Holtville, California.

For Sale at a sacrifice, 40 acre ranch in Inyo County, California, near Laws (in potato belt) for only $90 per acre. E. G. Rudolph, Laws, Inyo County, California.

SEEDS AND PLANTS

I Will Have One or Two Tons of Sorghum seed, especially selected for syrup making qualities for sale as long as it lasts. Send for list of different varieties, with description, prices and instructions for planting to get best results. Can send seed by parcel post. MARION GRABER, Hawthorne, California.

For Sale—Strawberry Plants, four varieties. Write for prices on Cane seed, Watermelon, and home grown garden seed. Primma Vista Gardens, R. D. 4, Arlington, California.

Strawberry Plants: Klondyke, Brandywine and other varieties. Best plants, quick service. Wholesale and retail. Price list free. V. R. Allen, Seaford-Del.

A Few Sacks Rhodes Grass—Honey sorghum and Sudan seed. Order now all will be scarce and high later. Kelley's Seed House, El Centro, California.

R*O*S*E*S 50c per dozen. Fruit and Ornamental Trees, Plants, Vines, etc. Write for catalogue. KAVAN NURSERIES, San Bernardino, California.

Rhubarb Plants — Wagner's Giant Crimson Rhubarb plants, extra clean, 50 cents per dozen. $3.00 per hundred. Currier Bulb Co., Seabright, California.

FERNS—BULBS—ROSEBUSHES. Annual and Perennial plants. Write for catalogue. The Hoosier Florists, Escalon, California.

Peruvian and Common Alfalfa Seed—Specialty. Write for prices and sample. Box 501 Fowler, California

MISCELLANEOUS

CORRUGATED IRON—LUMBER. We are wrecking the Pacific Portland Cement Company's old plant near Suisun, and have about 100 tons of fine corrugated galvanized iron. Will fill orders any size.
We are also taking down the old Tanforan Race Track, and have about 1,000,000 feet of fine lumber and several thousand feet of good T. & G. redwood. Lumber sold in carload lots only. Get in touch with us.
THE MENDELSON CO., 748 BRANNON ST., SAN FRANCISCO.

Here Is What Counts—Mr. H. E. Gilley of Los Angeles, following my directions after I analyzed his soil had a 65 per cent crop of oranges last year, while the neighboring groves suffered so much from "drop" that they held only a 15 per cent crop. CAN'T YOU SEE THE VALUE OF SOIL ANALYSIS? R. R. Snowden, Agricultural Chemist, 320 Stimson Building, Los Angeles, California. Phones: Office Pico 843; Res. West 702.

I Ship 10 pounds walnuts for $3.00; 1 box of lemons 45 to 48 for $1.00 prepaid any express office. Have dried prunes and apricots. Ernest Vince, Santa Barbara, California.

Made of Redwood, Hawley's Perforated wooden well casing, the best and cheapest well screen made. Send for descriptive circular. G. M. Hawley, La Mesa, California.

For Sale—Walnut grafting wood or budding wood from vigorous proven Eureka walnut trees. Dr. C. A. Anderson, Zelzah, California.

To Reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

For Sale—700 smudge pots in good condition, mostly filled, some extra fuel; $200 for the lot. G. A. Starrett, Rialto, California.

FERTILIZERS

Lime—Slaked. Corrects heavy sour soils quickly. H. B. Matthews, 495 Douglas St Pasadena

For Sale—1000 lbs. Hauser's special potato fertilizer; bargain. F. M. Jenkins, 205 Base Line, San Bernardino, California.

TREES

MY "TOP NOTCH"
GRAFTED WALNUT
ORANGES and
LEMON
TREES
now ready for you. Write, phone or call. William Pollard, 1831 S. El Molino Ave., South Pasadena, California. Colorado 1613.

Grafted Walnut Trees—Placentia Perfection and Eureka on northern black roots. Citrus stock one year old from selected fruit bud wood. Also all the leading varieties of fruit and avocado trees. Order your trees early and get the first choice. Geo. M. Ketscher, 702 Orange Ave., Santa Ana. Phone Sunset 229W.

Budded Avocados, Fuerte, Sharpless, Lyon, Dickinson, Blakeman, Puebla, Spinks, Taft, Linda, Rey, Queen, Knight, and others. A fine stock of field grown trees, $2.50 for one, $2.00 each by the 100, 25c per tree for packing. Newbery-Sherlock, 2202 East Colorado St., Pasadena, California.

For Sale—250,000 Homegrown fruit trees. Apricots, apples, pears, peaches, walnuts, etc. All stock guaranteed first class in every respect. You will save money by writing for our descriptive catalogue and low prices. Orange County Nursery Co., Box 235, Anaheim, California.

For Sale—75,000 almond trees, at a sacrifice. Guaranteed in every respect. Your inspection cordially invited. Also No. 1 Calimyrna fig trees. Call or write T. B. Stribling, Le Grande, California, Merced Co. Box 144.

Trees—All Kinds of Fruit and ornamental trees, vines, etc. Growers of general nursery stock. Lowest quotations given on application. Send us your want list. Can also use a few good salesmen. Albany Nurseries, Albany, Oregon.

BUDDED AVOCADOS

All leading varieties, field grown. Mather's Avocado Nursery, 137 N. Fair Oaks Ave., Pasadena, California.

Buy Almond Trees from an almond specialist. Have a large stock on bitter almond roots. Get my prices before buying. Wholesale price to the trade. W. T. Hohenshall, LeGrand Nurseries, LeGrand, California.

Grafted Walnut Trees — Placentia Perfection and Eureka. A careful selection of grafting wood from the best groves of Southern California has been used on best black root stock. C. W. Story, Rivera, California.

No. 1 Grafted Walnut trees 6 to 14 ft. high, grafts selected from one of the best Placentia orchards in Orange County. Geo. M. Bullock & Son, Rivera, California.

Walnut Grafting Wood for sale—Selected Franquette, Mayette, Eureka and Payne, 5 cents foot. Bowman-Kuhn Ranch, San Jose, California.

For Sale — Seed Bed Stock, Orange and Lemon Trees, and Avocado Trees of all standard varieties. Walker - Hubbard Nursery Co., San Fernando, California.

Olive Trees—Mission, Manzanillo. Propagated by me from trees of known bearing qualities. Guaranteed. L. T. Schwacofer, Hemet, California.

Apricots, Peaches and Olives. Good thrifty stock and carefully grown. C. E. MOYER, Hemet, Riverside County, California.

For Sale—Highest grade of Placentia and Eureka walnuts on black root. A. R. Marshall, 1212 N. Ross St., Santa Ana, California.

WESTERN YOLO NURSERY CO. A few almond trees on almond root left. Price per 1000 18c. D. C. Parker and R. Jose, Esparto, Cal.

For Sale—Yearling Valencia Orange trees. Nothing better on the market. P. H. Ebel, Tustin, California.

TREES, TREES, TREES.
No War Prices.
Cash Nurseries, Sebastopol, California.

For Sale—8000 Mission and Manzanillo olive trees. Bed rock prices. York Nurseries, Highland, California.

Bargain in Bartlett Pears. Write to L. J. Eachus, Oak Mound Nursery, Lakeport, Lake County, California.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

Walnut Trees—Placentia and Eureka on black root. La Puente Walnut Nursery, Puente, California. Phone 103.

WANTED

Ranch Superintendent of practical experience in the culture of citrus and deciduous fruit and nuts, as well as alfalfa and general farming will be open for re-engagement Jan. 15th. C. E. Buck, Route A, Box 122, Modesto, California.

Want to Hear From Owner of Farm or fruit ranch for sale. O. O. Mattson, St. Paul, Minnesota.

CATERPILLAR TRACTOR WANTED. E. HYATT, HAZELTON, KANSAS.

RABBITS

Pine Ridge Rabbitry, Monterey, California. A fine line of Flemish Giants, New Zealand Reds and Long Haired Blacks. All stock guaranteed. Write for particulars.

Money in Rabbits
Raise rabbits for us. Will pay $6.00 per pair. Send stamp for particulars. H. E. Gibson Co., Arcadia, California.

For Sale—New Zealand Red, Utility and pedigreed stock. Reasonable prices. Stephen E. Banneck, 330 E. North Hicks Street, Los Angeles, California.

For Sale — Rabbits, New Zealand and Flemish Giant, young stock. Paul Kruger, Watsonville, California.

HOGS

BERKSHIRES BERKSHIRES

ANCHORAGE QUALITY

We always have a limited number of specially selected pigs for sale sired by Star Leader, now Grand Champion of the World, or by his son Anchorage Leader II. All pigs are well developed and are excellent value for the price asked. All are cholera immune and the Anchorage Farm guarantee is behind each pig. Write today for full information to Anchorage Farm, Orland, Cal.

BERKSHIRES GUERNSEYS

GRAPE WILD FARMS
A few fall boars left by Royal Superbus —also a limited number of fall gilts. We have early spring pigs of both sexes and we are breeding some top gilts for fall farrow. Prices upon application.
A. B. HUMPHREY,
Escalon, San Joaquin County, California.

Chester Whites, "BILLIKEN BRAND." How about the spring pigs, are you going to have some good ones? To produce those smooth, growthy kind you will need a "Billiken" boar. Have but 3 yearling boars left. Have 6 yearling gilts, bred for March farrow, for delivery during December. A few weaned fall pigs, both sexes. C. B. Cunningham, Mills, California.

Mammoth Poland-China sows—We are offering about twenty tried sow and yearling gilts all sired by the world's champion, Superba, at very attractive prices. They are very large and smooth and possess a world of quality, all guaranteed safe with pig before shipping. Rough's Greenfields, Arlington Station, Riverside, California.

We Pay Cash for Hogs of All Sizes, weights and breeds. Any number from one to several thousand considered. What have you? Durbin & Forbes, 722 San Fernando Building, Broadway 4170. 3030 E. Vernon Ave., South 2712-J. Los Angeles.

Durocs, Orion C. King Blood. Very typy boars ready for service. O. C. K. and Col blood. Some boars and gilts 4 mos. old from 800 pound junior yearling sows, same blood. Something worth while. Prices reasonable. Garden City Sanitarium, San Jose, California.

Young Boar by OCK'S Chief Grand Champion Ohio and Indiana last year. Dam by Pathfinder's Perfection by Pathfinder. Sterling Smith, Route 1, Box 220, San Diego.

Mule Foot Hogs, large type, booking orders for spring litters. These are the farmers' easy feeding, profit producing kind. H. T. Bailey, Box 37, Lodi, California, "The Blue Gums."

Duroc-Jerseys—We won more money on Durocs at the State Fair than any other exhibitor. Why not get some of this winning stock? June Acres Stock Farm, Davis, California.

Castleview Berkshires are the typey, modern, quick-growing kind, choicest blood lines. Prices reasonable. Castleview Ranch, Berkshires exclusively, Santa Rosa.

The Best in the West—California Gertsdale and Presidents Equal are my herd sires. Fall and spring boars now ready to move; each one a corker. Dr. J. A. Crawshaw, Hanford, California.

Large Yorkshires—The ideal hog for the progressive farmer. Service boars and fall pigs, both sexes, for sale. A. L. Tubbs Co., Callstoga, California.

Masterpiece-Superbus strain Berkshires. Choice stock from prolific breeders. Geo. A. Stingle, San Gabriel. Ranch Garvey Ave., two miles SW. of El Monte.

Carruther's Farm Berkshire Hogs — Our herd won Premier Exhibitor prize at the P. P. I. E. Exposition. Live Oak, California.

Duroc-Jerseys — We breed the champions. Peter, Lamson & Walker, Devore, San Bernardino County, California.

For Real Good Berkshires, cholera immune, write Frank B. Anderson, Box 724, Sacramento, California.

Greenwood Farm Durocs — "Size with Quality." H. C. Witherow, Palo Cedro, California.

Registered Durocs of the big type—Cholera immune. Derryfield Farm, Odd Fellows Building, Sacramento, California.

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Sixteen Weanlings, 11 yearling mules all from same Jack. Some good horses. If sold soon can be bought reasonable. Chas. Hubbard, Riverdale, California.

One or Two horses, cheap! Cash, part cash and White Leghorns or pigs. Rio Hondo Rancho, Downey, California.

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DUCKS

For Sale—25 choice White Pekin ducks selected for breeders, now laying, weight 7 to 8 pounds each. A. O. & P. M. Forster, 2918 Otis Street, Berkeley, California.

POULTRY

Baby Chicks for Sale—100,000 S. C. White Leghorn chicks from heaviest laying (Hoganized) stock for delivery every month in the year, at very reasonable prices. Safe delivery of all chicks guaranteed. Shipped safely anywhere West of the Rockies. No money in advance; pay on delivery. Finest hatchery in the world. Established 1898. Further information write Must Hatch Incubator Company, 438 Seventh St., Petaluma, California.

Baby Chicks—We specialize on Money Making White Leghorns. High record stock with records that are unimpeachable. Also Brown Leghorns, Anconas, Minorcas, Rocks, Reds, White Wyandottes and Buff Orpingtons. Especially Interesting Circular and Price List ready January 1. B. W. Archibald, Soquel, Santa Cruz Co., California.

Valuable 1919 Circular Ready—Our 200-290 egg Brown, Buff, White Leghorns; Anconas, Reds, Barred, White Rocks, Minorcas, Wyandottes, Orpingtons, ducks, clearing customers $5.00 each yearly. Few hens, pullets, cockerels, reasonable. Half booked on CHICKS to April, last year's prices. Many repeat orders. 40,000 capacity hatcheries full now. James Beeson, Pasadena, California.

Thoroughbred Barred Plymouth Rocks. egg record 1917, 190 eggs per hen; 1918, 210 eggs per hen. Limited number settings December and January $2.50 for 15 eggs, chicks March, April and May 30c each. Call mornings. Warren Poultry Yards, 36 Little Delmas Ave., San Jose, California. Phone 5599.

Baby Chicks—From my vigorous, heavy laying, thoroughbred flock of S. C. White Leghorns. 14 years of most careful breeding for standard and laying qualities. Write for prices and particulars. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal.

Baby Chicks—Ready in January. Order early and get the date you want. White and Brown Leghorns, Black Minorcas, R. I. Reds, Barred Rocks. Safe delivery guaranteed. Write for circular. Stubbe Poultry Ranch and Hatchery, Palo Alto, California.

Heavy Laying S. C. Reds—Large vigorous cockerels and yearling males directly descended from New York, Boston, Los Angeles winners, $5.00 and $10.00. Satisfaction or money back. W. M. Marquam, Bishop, California.

Baby Chicks and Eggs—Hoganized White Leghorns, utility Rhode Island Reds and Barred Plymouth Rocks our specialty; also choice Anconas and Blue Andalusians. Free circular. McDonald Poultry Ranch, Route 1, Box 246, King Road, San Jose, California.

Model Poultry Farm — White Leghorn Specialists. Our fifteenth year in business. Baby chix and hatching eggs for sale, also first class breeding cockerels. Our prices are right. W. C. Smith, Prop., Corning, California.

"Eastman's Bred-to-Lay" Hoganized and trapnested Barred Plymouth Rocks. JANUARY Chicks. Eggs, cockerels. Fairmead Poultry Farm, Fairmead, California.

White Leghorn Baby Chix from heavy laying (Hoganized) stock; $15.00 per 100. We guarantee safe arrival. The Pioneer Hatchery, 409 Sixth St., Petaluma, California.

Chix—Barred Rocks, R. I. Reds, Orpingtons, Anconas, Minorcas, Buff, White and Brown Leghorns. Breeding Cockerels. Enoch Crews, Seabright, California.

Blue Andalusian Cockerels—A fine well developed bunch from heavy laying strain. Get your order in early. Prices reasonable. J. R. Huddleston, 342 Edgeware Road, Los Angeles.

Baby Chicks—We guarantee full count of live chicks that will please you. Hoganized White Leghorns exclusively. Send for prices. White Leghorn Ranch, Pomona, California.

Baby Chicks (White Leghorns) shipped on approval before remitting. No weak ones charged for. Schellville Hatchery, Schellville, California.

White Leghorn day old chicks from flock that averaged 174 eggs last year. Chas. K. Hale, Prospect Ave., R. D. 1, Santa Cruz, California.

Black Orpingtons Lay, Weigh and Pay—Prize winners at leading shows. Write for mating list. IVEYMOOR FARM, San Leandro, California.

We Have the Large heavy laying S. C. White Leghorns. Order now for early chicks. Tupman Poultry Farm, Ceres, California.

Baby Chicks, White and Brown Leghorns, R. I. Reds, Barred Rocks. E. W. Ohlen, Campbell, California.

Buff Orpingtons, Buff Ducks, Bourbon Red turkeys. The Ferris Ranch, S. Reservoir, Pomona, Cal.

For Sale — Bailey's Beautiful Barred Rock cockerels and pullets, eggs. R. P. Bailey, Spa, California.

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Guernseys—We will sell stock from our prize winning, high producing herd, at reasonable prices, valued according to individuality and breeding. Our supply is limited but if the buyer wants a number of animals and will write us we will furnish him with particulars. Revada Guernsey Farm, Yountville, Napa Co., California.

SHORTHORN CATTLE, SHROPSHIRE SHEEP, Berkshire Hogs and Shetland Ponies. Get our prices and descriptions before buying. Butte City Ranch, Box C, Butte City, Glenn Co., California. W. P. Dwyer and W. S. Gullford, Owners.

Registered Holstein Bulls from high producing dams for sale at reasonable prices. Also a few choice females. McAllster Sons, Chino, California.

Registered Shorthorns (beef) calves and yearlings for sale. Both sexes, reds and roans. Choice goods breeding. Fair Oaks Ranch, Willits, California.

Ayrshires (registered) — A few young bulls, heifers and cows in milk at a bargain for quick sale. A. MacMinn, Phoenix, Arizona.

Jersey Bulls and bull calves. Good individuals from producers. Write or come and select. N. H. Locke Co., Lockeford, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk Strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Sunshine Farm Jerseys—Tuberculin tested. "Production counts." E. E. Greenough, Merced.

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Registered Guernseys for sale. P. J. Welsel, Santa Fe Springs, California.

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REDWOOD TANKS, new, used, all sizes.
NEW GALV. TANKS, 1000-gal., $42.50; 2000, $56. Used galv. tanks, 4500 gal., $95; 6500, $125; 8000, $140; fine for storing water or oil.
RANCH TOOLS: 10-ft. fine double disc drill, $110; beet drills, $35; 24-disc harrow, $45; broadcast seeder, 2-row bean cult., $45; fine 2-gang disc plow, $75; Avery tractor only used month, cost $610 for $450, runs like Metz; new 14-in. moldboard Rock Island riding plow, $55; Deere 14-in. riding plow, $35; single disc, $48; brand new 4-gang P. & O. tractor plow cost $330 for $230; 3-gang, $85; 4-gang, $110; spike harrows, $10 to $18; new alfalfa cult., cost $120 for $65; CABLE, 12c; sundries.
PUMPS: Plunger, centrifugal, rotary, many sizes, kinds. Cylinders, rods, piping, fittings. DEMITT CO., UPSTAIRS, 120 N. Main, Los Angeles. Also buy.

For Sale—One 5 inch Byron Jackson two stage pump; one 6 inch Byron Jackson single stage pump; one 8x10 Rumsey Triplex pump with Morse safety chain and sprockets; one 35 H. P. Fairbanks Morse distillate engine; 900 feet 12 inch steel water main; a number of gate valves from 2 inch to 8 inch. Write for information to L. Judd, Secretary San Ysidro Irrigation District, San Ysidro, California.

For Sale—Bean "TrackPULL" Tractor, A-1 condition, used less than 50 hours. Make an offer. Can be seen quarter mile east of Thermal, California. Reason for selling I am in the Army and need money. Cadet W. F. McIntyre, March Field, Riverside, California.

Waterloo Boy Tractor, two speed, all bearings incased, runs in oil, very little used. Also new Knapp orchard tractor plow. H. S. Blossom, Lakeside, California.

Gasoline Engines, the largest stock of Used gas engines in California from 2 h. p. to 100. Thoroughly overhauled. Machinery Exchange, 733 North Spring St., Los Angeles.

For Sale—No. 18 Holt Tractor, Moline 4-Disk plow, 8-ft. double-disk harrow, 12-ft. orchard drag. Terms reasonable. Mrs. C. H. Euans, Gilroy, California.

For Sale—Sampson Tractor 10x25, overhauled and in excellent shape. Cheap. Geo. E. Small, Terra Bella, California.

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Eastern Bred Mammoth Bronze turkeys. Being sure my birds will give the usual satisfaction, I guarantee them to be as I represent. If not return at once C. O. D. R. M. Dodge, Stafford Farm, R. D. 2, Box 129, Bakersfield, California.

Bronze Turkeys—Mammoth Bronze Toms and hens for sale. Place orders now before prices advance. Also Collie dogs for herding. John G. Mee, St. Helena.

Breeding Stock for Sale—Young tom turkeys, pure Mammoth Bronze; also eggs in season. Turkey Ranch, San Dimas, California, R. D. 35-A. Covina Phone 902.

For Sale—Golden Bronze Turkeys.—Big boned breeding Toms of America's best strain. Eggs in season. M. M. Reiman, Planada, California.

For Sale—Mammoth Bronze Turkeys, the Best in the West. Geo. A. Smith & Son, Corcoran, California.

PIPE

"TESTED" and "GUARANTEED" Screw pipe, casing, valves and fittings. Riveted slip joint pipe; all sizes. New and used. "Pacific" pipe for all purposes.
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Main and Howard Sts., Est. 1906, San Francisco

For Sale—5500 feet 10-inch, No. 14 used riveted steel pipe, 2800 feet 11-inch, 2500 feet 12-inch, 2000 feet 4-inch. L. B. Vollmer, Monrovia, Cal.

ENGINES

Several New and Slightly Used Engines. ARNOTT & CO., Implements, 112 E. Los Angeles St., Los Angeles.

Veterinary

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.
Unsigned communications receive no attention.

Cow Pox

My cow has the following symptoms: There are hard lumps about the size of a marble on the udder and some along the top of her back. They develop slowly and eventually break. There are also some small pustules on the udder. For about two months after calving I noticed a pinkish fluid in the bottom of the pans after the milk was skimmed and poured off. Have been unable to breed her so far. What is the trouble and what is the remedy?—Subscriber, El Cerrito.

It is probably what is called cow pox but that usually shows up only on the udder. The lumps on the back may be due to warbles. See article on warbles on page 581 of the Cultivator of December 7. The cow pox may be easily transmitted to another cow by carrying some of the serum from one of the blisters on the hands to another cow, or one may get it himself, which would be the same as being vaccinated. Mix three pounds of epsom salts and two pounds of common salt and give a handful of it in the feed once a day, feed her laxative feed and use a solution of permanganate of potash; half a dram to the quart of water, to bathe the ulcers on the udder to keep it from spreading. It will not interfere very much with the flow of milk nor the health of the cow in any other way.

Worms in Dog

I have an English bull terrier, three years old, in apparently perfect health but in the last year he has become subject to fits. He gets dizzy, falls on his side, paws the air, froths at the mouth and is unconscious for about five minutes. Suddenly he comes to himself and seems dizzy for some time afterwards and is thirsty. He is perfectly harmless at this time and apparently none the worse for his experience. Is there anything I can do to cure him?—Subscriber, Los Angeles.

The fits are probably due to worms in the stomach. Have your druggist prepare ten powders, each containing ten grains of areca nut, and ten powders, each containing five grains of santonin. Give one powder of the areca nut every morning in half a cup of sweet milk and one powder of the santonin every night by putting it well back on his tongue. There is very little taste to either of the medicines and you will probably have very little trouble in giving it.

POULTRY PROSPECTS IN STANISLAUS

As to poultry conditions in Stanislaus County, Mrs. J. G. Tupman writes:

"Prospects for a good year were never better, orders are exceeding anything we have ever had. Although a few have gone out of business others are going in, and those that stayed in are increasing their flocks. Our hens are in fine shape, and laying like they meant business. We culled very heavy last year and expect to have very fine chickens this year. Have 1100 hens, all large and healthy."

NATIONAL LIVE STOCK MEETING

T. W. Tomlinson, secretary, has called the American National Live Stock Association to meet in Denver on January 21 for its twenty-second annual convention. The session will last three days.

The call states that there will be discussion of the work of the bureau of markets in the regulation of stock yards and commission men, the regulation of prices of hides and wool by the war industries board, precautions against future outbreak of the foot and mouth disease, and influenza among horses and railroad service.

HARTSOOK LOSES GREAT SOW

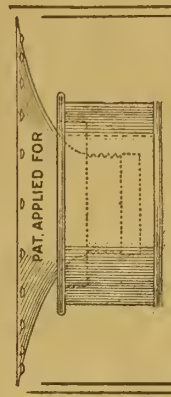
The famous Poland China sow, Big Knox Girl, first prize aged sow and reserve grand champion at the 1918 state fair, owned by Fred Hartsook, Lankershim, is dead. It is thought that an injury she received while being unloaded at the Liberty Fair was the direct cause of her death. Big Knox Girl was considered one of the most valuable sows in the state, and her loss will be keenly felt by Mr. Hartsook.

A NEW DUROC RECORD

During the International Live Stock Show, Herbert W. Mumford sold at public auction 55 head of Duroc-Jerseys—mostly sows—for an average of $428. Brookwater Lass D., grand champion at the show, topped the sale at $2225, at which figure she became the property of Thos. Johnson of Ohio. The average recorded represents the record for the breed.

A fine rain visited several sections of Southern California last week.

Growers in Brawley district plan to increase their market through the growing of additional varieties of truck crops and shipping mixed carloads.



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It is just what the name implies. It is the most effective tool for keeping down the growth of weeds after rains or irrigation on orchard, bean, beet or grain lands. It does twice the work with the same team of any other tool for this purpose, and as the knives overlap each other it is impossible to miss anything in their course. Our patented knives are formed with a straight throat so that they wear uniformly from heel to point and are all stamped with our quality trade mark.

Orchardist will find this tool a valuable one for leveling down furrows and for preparing the ground for the cultivator. The large range of work makes it almost indispensable, and the extremely low price at which it is sold brings it within the reach of all. Made 4, 5, 6, 8, 10 and 12 feet sizes.

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Trees which will bear young and produce large, luscious fruit.
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Easily excels any other variety in the great size of the stalks which are exceedingly crisp and juicy.

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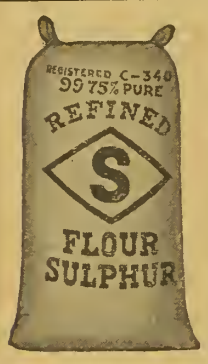

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Grange Resolutions

MASTER FRANK L. HUNT of the California State Grange attended the recent annual convention of the National Grange at Syracuse, regarding which he writes:

"Altogether this was a very 'forward looking' session, and much important work in connection with agricultural life was disposed of in different ways. Perhaps the most important single document that passed through the National Grange was the one on 'Agricultural Reconstruction.'"

From the resolutions we quote:

"The farmers of America are proud of their part in the world war. In loyalty and devotion, in food production, in financial aid and in the gift of their sons they have again shown their sturdy Americanism and have justified the confidence always reposed in them when serious danger threatens the republic.

"Just as agriculture has had a vital part in the war, so it must have a strong voice in the reconstruction program that is to follow. This task is hardly less gigantic than the great war itself, and will command the best thought of our leaders. Broad-minded statesmanship demands that our entire citizenship, without distinction of class or occupation, shall unite in keeping the nation steady in the inevitable price leveling process that must come. Justice to all must accordingly be uppermost in our minds while we insistently urge that the interests of agriculture so fundamental to the prosperity of the whole nation must be safeguarded at every point.

"Holding the first national gathering of farmers since peace has become definitely assured, it is clearly the duty of the National Grange as a recognized spokesman of the organized farmers of America to state clearly and forcefully the needs and demands of agriculture in the program of readjustment. To fail is to invite neglect and to merit contempt."

As to profitable agriculture the resolutions add:

"Profitable agriculture is the keynote of our declaration. A prosperous and progressive agriculture with an independent, self respecting citizenship in the open country is the surest guarantee of an enduring national life. Farming must be made as profitable as any other occupation involving the same amount of investment, business ability and hard work, or our democracy must fail and our people go hungry.

"Facing the most stupendous tax levy which the nation has ever seen, we demand that so far as consistent with national safety, war contracts be cancelled and the hundreds of boards and commissions and the thousands of clerks and employees made necessary by the war shall be released from their responsibilities at the earliest possible moment. Just as we have earnestly urged the spending of the last dollar and the use of the last man to win the war, so now we as insistently demand that the most rigid economy shall be exercised in governmental expenditures.

"The present system of marketing and distributing is clumsy, wasteful, costly and inefficient and lends itself readily to the most offensive forms of speculation and control. It jeopardizes adequate food production by establishing the lowest possible price to the producers and in turn naming the highest possible price to consumers. Cost of production plus a fair profit should determine the price on farm products. Unnecessary middlemen, especially in the retail trade, should be eliminated. Service with a fair profit rather than control with all the profit the traffic will bear is our standard for the middleman. Conforming to this standard he should be encouraged by patronage. Refusing, he should be supplanted by every available form of direct and cooperative marketing. We recommend the extension of cooperative shipping associations, the establishment of city retail markets, the construction of municipal warehouses and terminal markets, the careful grading and marketing of farm products with personal trade marks, the extension of parcel post marketing, and the establishment of such regulation and control as will effectually remove the evils that have for decades discouraged producers and burdened consumers. We further demand that all food and feed products be sold under such laws and regulations as will prevent one product being bought and sold as and for another."

As to the press and free speech and zone postal rates: "The farmer, more than any class, is dependent on the mails for guidance, happiness and intelligence. Free speech is fundamental; censorship should be removed. We demand that the archaic and un-American zone system now in force in respect to mailage of periodicals be discontinued.

"We demand that railroads be returned to their former owners; that abuses from overcapitalization and mismanagement be corrected. As to public highways, "We demand that federal funds shall not be used in extensive boulevard systems, but that market and post roads be given first consideration" and "We urge that road construction be used as a shock absorber against oversupply of labor." "We oppose the continual domination of our vital interests by men who neither understand nor justly estimate the position and service of American farmers."

"We believe the secretary of agriculture should be a practical farmer." As to land tenantry: "Every means should be provided to assist the young man of character and training to secure a homestead of his own."

"We advocate establishment of a system of personal cooperative credit."

"We oppose the proposed plan of providing swamp and arid lands by drainage and irrigation for returning soldiers as unsound and impractical."

"We demand that in the readjustment of tariff schedules agricultural products be given the same protection as other commodities."

"We demand a system of education that will direct the farm youth toward the farm, not away from it."

REPORT OF LAND BANKS

The farm loan board reports:

The statement of condition shows that the banks have made loans to farmers to the amount of $139,378,156. Their capital stock has increased from $9,000,000 to $15,975,220. They have issued farm loan bonds to the amount of $146,122,200. They hold among their assets United States government bonds and treasury certificates to the amount of $14,850,000. Their excess of expenses and interest charges over earnings is $211,609.09, which is a reduction of over $200,000 since the previous semiannual statement, and amounts to less than one and a half per cent of their present capital. Three of the banks show an actual surplus. Before the close of the present month, two banks will begin the repayment of the stock originally subscribed by the government. The total payments by borrowers overdue on October 31 amounted to $86,073, of which $51,117 was less than 30 days overdue, and only $10,730 was 90 days or more overdue.

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HOW TO GRADE GRAIN

Continued from Page 661

In the grain inspector's or supervisor's office a Boerner sampling device is used to thoroughly mix, mechanically, the large sample and then separate it into two exact parts. One of these parts is used to determine the dockage; the other is put through the sampling device two or three times more, in order to reduce the sample, thoroughly mixed, to a size that will permit of easy and more rapid testing. The sampling device is described and illustrated in United States Department of Agriculture Bulletin No. 287.

This device is not necessa for one doing only occasional sampling, for the sample may be thoroughly mixed by hand on a table, spread out, and equally divided until a sample of the desired size is secured.

Determining Dockage

In the revised "Official Grain Standards of the United States for Wheat" a certain character of foreign material is designated as dockage. It is defined as follows: "Dockage includes sand, dirt, weed seeds, weed stems, chaff, straw, grain other than wheat, and any other foreign material that can readily be removed from the wheat by the use of sieves, cleaning devices or other practical means. Also, undeveloped, shriveled, and small pieces of wheat kernels removed in separating the foreign material, and which can not be removed by properly rescreening or recleaning, are also designated as dockage."

The amount of dockage is calculated in percentages. In determining the percentage of dockage, fractions are disregarded. The dockage is either 1 per cent, or 2 per cent, etc. Finer distinctions are not regarded as necessary.

In making the dockage test, 1000 grams, or two pounds three ounces, of wheat is taken and cleaned by hand. The following cleaning devices are used in the offices of federal grain supervision:

A small wheat tester (commonly called "oat-kicker") or device for removing barley, oats, wild oats, pieces of straw, weed stems and other coarse matter from wheat. This is a modified form of the machine already in general use in the spring wheat states where the dockage system has been practiced for many years. Also, a set of perforated metal hand sieves consisting of a bottom pan, in which the several sieves nest, a fine seed sieve, a buckwheat sieve, a fine and a coarse sieve, and a scalper sieve.

The sizes of the perforations are given in the handbook already mentioned. It is absolutely essential that the perforations of the sieves be exactly as given. A slight variation in the dimensions will materially influence the percentage of dockage. Sieves which are comparatively cheap are advertised in grain journals.

A detailed description of the method of determining the dockage in wheat is given in the handbook. However, it seems important to note here that the instructions say that any wheat kernels that remain on the scalper sieve should be picked out and returned to the wheat and should not be considered as dockage. Also, the dockage that is removed is rescreened in order to recover as much of the broken kernels as possible, and they are put back into the wheat.

The dockage will therefore be represented by the coarse foreign material in addition to the finer screenings obtained by hand sieving.

Since any foreign matter remaining in the wheat after the removal of dockage is considered as "foreign material other than dockage," and is a factor in the grading, great care should be used in sieving the samples.

Smutty wheat is designated as "wheat that has an unmistakable odor of smut, or that contains spores, balls, or portions of balls of smut in excess of a quantity equal to one ball of average size in 50 grams of wheat."

The term "general appearance" refers to such conditions as bright or not bright, distinctly low quality, small inseparable stones or cinders, and treated wheat.

Test Weight on Clean Wheat

The test weight per bushel is one of the main factors in determining the grade.

To determine the test weight per bushel, a quart tester is used and a sample of wheat from which the dockage has been removed is taken. The dockage should always be removed before making the test. The test should be made with a quart tester, and under average conditions a sample of 1000 grams of wheat (two pounds 3 ounces) weighed before the dockage has been removed, will give sufficient dockage-free wheat for determining the test weight with the quart tester. If the wheat contains a large amount of foreign material, however, it may be necessary to remove the dockage from more than two pounds and three ounces.

In Bulletin No. 472 the manner of determining the test weight and the tester used are described and illustrated. The improved tester reduces to a minimum the liability of personal error in making the test.

Incorrect Methods

Some of the common incorrect methods of filling the "brass kettle" in order to determine the weight, are: To pull the kettle through the grain until it is full; to sink it part way into the grain and fill it by pulling the grain over by hand; to fill the kettle by shoveling the grain into it with the hands; to fill it from a bag, pan, or funnel, the grain being poured from varying heights; or to pour the grain in a small stream sometimes and again in a large stream.

These methods give irregular results and should not be used. Furthermore, uneven results are obtained by following some wrong method in striking the excess grain off the kettle. This is often done with the scale-beam, a piece of broomstick, a pencil or other makeshift. Also, the kettle is sometimes tapped or jarred before the surplus is struck off; this should never be done. Because of the widely varying results that have been obtained in experiments when using such methods of filling the kettle and striking off the surplus, it becomes apparent that it is of vital importance that uniform methods be followed.

The tester already referred to consists of two main parts; namely, the stand with hopper and overflow pan, and the test kettle with a special beam.

The feature of the device, besides the special beam, is the hopper or funnel, through which the kettle is filled. This swings from a post fixed in the base to which it is attached. A feature of the hopper is a valve at the outlet, which holds the grain in the hopper until the inspector releases it. The opening through which the grain drops into the kettle is one and a quarter inches in diameter.

When properly adjusted, the opening is exactly two inches above the top of the kettle and exactly over the center. This is important, for to secure uniform results, uniform methods must be followed, and this height above the kettle has been adopted as standard. The valve should be closed while the hopper is being filled, and then opened wide with a quick motion. When the kettle is filled to overflowing, the hopper should be swung out of the way, so that the surplus grain can be struck off the kettle where the latter stands, in order that it shall not be jarred.

The excess grain should be struck off with the zigzag motions, using a wooden "straight edge" ⅜ inch thick, one and a quarter inches broad and 12 inches long, with the edges rounded. This style of stroker should be used in making all tests.

In using the ordinary test kettle, a funnel with a one and a quarter inch outlet may be suspended over a solid stand so that the opening will be exactly two inches above the kettle when the latter is in place. The outlet should be closed by holding a card against it until the funnel is filled. By removing the card, the kettle is filled; then the surplus should be struck off as described. In any federal grain supervision office a Cox funnel may be seen. This funnel has legs attached, which rest on the top of the kettle, and when in place the opening in the hopper is the correct distance from the kettle. This funnel is cheap, yet gives satisfactory results.

It is necessary, after the weight of dockage in the small sample has been found, to convert the weight into percentages. This, when using the small scales mentioned, is a simple matter.

"How can the farmer know whether the grain buyer is giving him a fair deal?" is a question sometimes asked. Obviously, he can not know, unless he can grade his own grain.

Any farmer or grain dealer, however, may seek information relative to any question of grading from the nearest office of federal grain supervision, of which 35 have been established, one at each of the principal market centers of the country. Should a farmer or a country shipper think that he is not getting the grade that he should for his wheat or corn, he should write to, or call at, the nearest office of federal grain supervision, state his case and ask for advice. The supervisor in charge will give him full instructions as to how to have a sample of his grain inspected. The California office is at San Francisco, 1131 Merchants Exchange Building.

NO WONDER!

A rookie had an important request to make at headquarters. He carefully formulated and rehearsed the speech he would make in presenting the request and timidly entered the office. The lieutenant on duty looked up from his desk and roared:

"Stand at attention!"

The rookie straightened himself and slapped his hands to his sides.

"Put your heels together!" roared the lieutenant.

The rookie complied.

"Now salute!" ordered the officer.

The rookie saluted.

"Now, what do you want?" the officer queried.

"I don't know," said the rookie.

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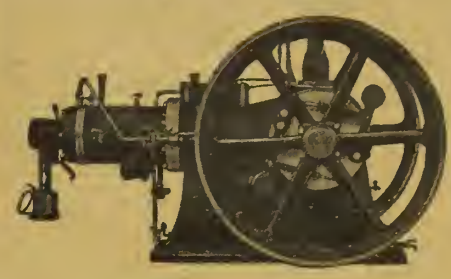

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Protect your spindles with Mica Axle Grease. It forms an even, slippery coating which prevents friction and makes easier pulling—no hot boxes—just like putting ball bearings on your wagon. And it lasts twice as long as common axle grease. Get a can from your dealer today.

STANDARD OIL COMPANY
(California)

MICA AXLE GREASE

Los Angeles Market

Los Angeles, Dec. 24, 1918.

BUTTER

Produce Exc. Quotations.
Prices to trade 1½ to 2½c higher.

Cal. Extra Creamery 63

Dec.	18	19	20	21	22
'18	62	62	62	62	63

CHEESE

Brokers' prices:
California fresh, lb. 33

EGGS

Exchange quotations. Price to retailers 2 to 3 cents higher.

Fresh extras 72
Case Count 64
Pullets 66

Dec.	18	19	20	21	22
'18	72	72	72	70	72

POULTRY

Hens; heavy, 31; light, 28; colored, 32; broilers, 37@41; fryers, 33; roasters, 30; old cocks, 20.

Ducks, 25; ducklings, 28-30; geese, 28; turkeys, 30-34; squabs, 40-43; Belgian hares, 20.

LIVESTOCK

The market for the better grades of steers is reflecting the Christmas demand, and prices have advanced about a half dollar on the top grades reaching the Los Angeles market.

The demand for good cows continues strong and the suppy is only moderate. The quality of the medium and common grades is rather below standard.

The hog market continues strong and while the quotations show an advance of 25 cents, the fact should be borne in mind that only the real tops fetch that figure. The bulk of sales remains at $16.50 to $17.00.

The market for lambs in Los Angeles is in a temporary bad way; most of the yards are full of lambs and prices are ruling unsteady.

Yearlings and wethers are in good demand and prices are firm.

The market for ewes has shown considerable improvement, due to a falling off in receipts.

Report of live stock conditions on the Los Angeles market as compiled by the United States Department of Agriculture, Bureau of Markets, through the local office:

Good Steers .....12.50@14.00
Common .....9.00@10.00
Good Cows .....9.00@10.50
Medium Cows .....7.00@8.50
Common and canners .....5.00@6.00

Prices quoted below are for carload shipments. Driven-in, or truck hogs sell for ½ cent less:

Hogs—
No. 1 hogs, 150-200 lbs. .....16.50@17.25
No. 2 hogs, 250-350 lbs. .....16.00@16.25
Sheep—
Lambs, 65@80 lbs. .....14.00@15.00
Wethers .....11.00@12.00
Ewes .....8.50@10.00

POTATOES

Wholesale selling prices:

Burbanks .....2.25@2.50
Sweet, lug .....65@75
Idaho Russets .....2.15@2.25

ONIONS

Wholesale selling price, cwt.
Australian Brown, lug .....1.50@1.75
White Globe, cwt. 4.25
Lompoc 2.15

VEGETABLES

Wholesale prices:
Beans—String 15
Limas, lb. .....9@10
Cabbage, cr. 1.00
Carrots, doz. 40
Cauliflower, cabbage cr. 2.50
Celery, cr. .....4.00@7.00
Lettuce, cabbage cr. .....1.40@1.50
Parsley, doz. 15
Peas, Tel. 12½
Peppers, Chili, lb., 12@13; Bell, lug....1.00
Pumpkins, lb., best 1¼
Radishes .....15@20
Rhubarb, bx., Crimson .....65@75
Strawberry .....1.10@1.25
Spinach, doz. 30
Squash—Hubbard, best, lb. 1¼
Tomatoes, unwrapped, ripe lug...75@1.25
Turnips, doz. 30

FRUITS

Apples—Bellfleurs, bx.....2.00@2.15
Yucaipa Delicious .....2.75@3.25
Pearmains .....1.60@1.75
Newtons .....1.75@1.85
Pears—Bartletts, storage lb., 8; D'Anjou lb., 7@8; Klefer, lb., 5; Winter Nellis, lb., 6@7.
Persimmons, lb. .....7@11

CITRUS

Lemons: Fy. packed 4.00@4.50 bx.; loose, 2.25@3.00; poorer, 1.25@2.00.

Oranges: Tulare County Navels, large size, 3.75@4.50; Southern Navels, medium to small size, 5.00@5.75; loose, 3.25@4.00 bx.; tangerines, 6@7 lb., Mandarins, 1.90 lug bx. Few Valencias, medium size, packed, 3.50@4.00 bx.

Grapefruit: Tulare County Seedless, medium, large fy., 2.75@3.25; Arizona Seedless, 3.50@4.00 packed bx., 2.25@2.35 half bx.

Arizona, Seedless, 3.50@4.00 packed bx.; 2.25@2.35 half bx.

HONEY

Cash to producer on farm:

Supplies very light, very few sales. Extracted, lb.: White, supplies practically exhausted, too few sales to establish a market; Light Amber, Sage and Alfalfa 21½@22 lb.; Beeswax, 36@37 lb.

BEANS

Price to retailer, cwt.:

Pinks .....7.50@8.00
Tepary 5.00
Lima 11.50
Large White 10.00
Small White .....10.25@11.00
Blackeyes 6.25
Garbanzos 11.00
Lentils 25.00
Kidney 12.00
Cranberries 11.25
Pintos 7.25

HAY

Quotations by Nichols-Loomis Company. Following are prices to growers, f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices:

Tame Oat .....21.00@26.00
Barley .....19.00@24.00
Alfalfa .....17.00@21.00

Quotations furnished by California Alfalfa Growers' Association, Riverside, California.

No. 1 dairy alfalfa hay carload lots f. o. b. Los Angeles, $27.20; f. o. b. common shipping points, taking a $3.10 carload rate to destination, $24.00.

GRAIN AND FEED STUFFS

Prices offered on exchange. For federal price see San Francisco market:

No. 1 Bright Feed Barley...2.22½@2.27½
No. 3 Yellow Corn, bulk .....3.20@3.30
Milo Maize, local .....2.43½@2.43¾
Alfalfa Molasses, ton 35.00
Alfalfa Meal, ton 34.00

San Francisco Markets

San Francisco, Dec. 23, 1918.

BUTTER

The quotations on butter are on the basis of solid packed cubes. To ascertain the market price of butter in squares, add to the cubes basis price per pound as follows:

Two-pound squares, parchment wrapped, ½c; 1-pound squares, parchment wrapped, 1c; 2-pound squares in cartons, 1½c to 2½c; 1-pound squares, in cartons, 2c to 3c.

Dairy Exchange quotations, lb.:

Extras 64
Prime firsts 63½

Dec.	17	18	19	20	21
'18	64	64	64	64	64
'17	46	46½	47½	50	50½

Rcts. 5 days ending December 21, 173,400 lbs.

CHEESE

Dairy Exchange quotations:

Cal. Flats 35½
Ore. Triplets 39
Jack, full cream 30

EGGS

Dairy Exchange quotations:

Extras 81
Extra Pullets 79

Dec.	17	18	19	20	21
'18	79½	80½	80½	81	81
'17	53½	54½	53½	53	52½

Rcts. five days ending December 21, 4150 cases.

POULTRY

We quote to producers, lb.:

Hens, 33; broilers, 43@45; fryers, 37@43; old roosters, 23; young roosters, 33.
Ducks, 30; geese, 30.
Belgian hares, live, 20@22.
Jack Rabbits, doz. 3.25@3.75.
Squabs, doz., 3.00@4.00.
Turkeys, dr., 42@45; live, 36@38.

LIVESTOCK

Prices gross weight:

Cattle: The following prices are for grass fed stock. Hay fed brings ½ to ¾c more.

Steers, lb., 11@12¾; thin, 9@10; cows and heifers, 8@9½; thin, 6@6½; calves, 10½@11½.

Sheep — Lb. gross weight: Wethers, 11½@12; ewes, 9@9¼; lambs, yearlings, 12@12½; milk, 14@14½.

Hogs—Hard grain fed, weighing 100 to 150 lbs., 16; 150 to 300 lbs., 16½; 300 to 400 lbs., 15¾.

POTATOES

Wholesale selling prices at wharf, cwt.: Choice deltas, 1.50@1.75; fy., 1.75@2.00; Red Shima, 2.30; Oregon Burbanks, 1.85@2.25; Gems, 1.85@2.35; British Queens, 1.75@1.90; sweet, lb., 2½@4.

ONIONS

Wholesale selling price on wharf, cwt.:
Australian, Brown and Yellow..1.00@1.35

VEGETABLES

Wholesale selling price:

Artichokes, doz. .....35@1.25
Beans, String, lb., 12½@15; Limas..8@19
Wax .....7@12½
Beets .....1.00@1.50
Brusseis Sprouts, lb. .....5@6
Cabbage, lb .....¾
Carrots, sk. .....1.00@1.25
Cauliflower, doz. .....75@1.00
Celery, doz. .....30@50
Cucumbers, hothose, bx. of 30...2.50@3.00
L. A., lug .....2.50@3.25
Egg Plant, lb. .....5@12½
Lettuce, doz. .....20@40
Southern Iced, cr. .....1.75@2.00
Egg Plant, lb. .....5@10
Peppers, Chili, lb. .....7@10
Mushroom, wild .....10@25
Peas .....14@15
Pumpkins, sk. .....1.00@1.25
Spinach, lb. .....3@4¾
Rhubarb, bx. .....1.25@2.00
Squash—Cream .....85@1.15
Hubbard, sk. .....1.25@1.75
Marrowfat .....1.25@1.50
Tomatoes, lug .....50@1.00
Turnips, sk. .....75@1.25

FRESH FRUITS

Apples—Newton Pippins .....1.35@1.75
Pearmain .....1.25@1.65
Spitzenburg .....2.00@3.00
Avocados, doz. .....6.00@7.00
Cranberries, bbl. .....15.00@20.00
Grapes, cr. .....1.35@2.25
Olives, lb. .....10@12½
Pears—Beurre Hardy 1.50
Kieffer, ½ bx. .....1.50@1.75
Winter Nellis .....2.25@2.75
Persimmons, bx. .....1.00@1.50

CITRUS

Box: Lemons, 2.50@4.50; lemonettes, 2.50@3.00; grapefruit, 2.00@3.00; limes, 1.25@1.50; Mandarins, 1.30@1.75; cr., 1.75@2.00; tangerines, bx., 1.25@1.50; half orange bx., 2.50@3.00; new Navel, 2.75@5.50.

DRIED FRUITS AND RAISINS

Prunes — Bulb basis: 30-40s, 10; 40-50s, 9½; 70-80s, 8½; 80-90s, 8; 90-100s, 8; in 25-lb. boxes, 20-30s, 18½; in 50-lb. boxes, 100-120s, 5¾; 120s up, 5¾.

Peaches — Bulk basis: Standard yellows, 11¼; ch., 11¾; fy., 12½; extra fy., 13¾; slabs, 10¼; standard Muirs, 11¾; ch., 11⅞; fy., 12⅞; extra fy., 14; slabs, 10¼.

Raisins—Muscats, pkge. seeded; fy., 36 16s. 9⅝; fy., 54 12s, 7¾; ch., 36 10s, 9⅛; ch., 45 12s, 7¾. Bulk seeded, in 25-lb. boxes: Bakers, 8; loose, in 25-lb boxes, recleaned and floated, 1-cr., 8⅛; 2-cr., 7½; 3-cr., 8; 4-cr., 8¾; layers, ordinary pack, 20-lb. boxes, 3-cr., 1.85; 4-cr., 2.10; 6-cr., 2.95; 10-lb. boxes, 3-cr., 1.05; 4-cr., 1.20; 6-cr., 1.65; 5-lb. boxes, 3-cr., 65; 4-cr., 70; 6-cr., 90; vineyard run layer raisins, 50 lbs., 3.00; 100 lbs., 7.50.

Figs—Bulk basis: White Adriatic, extra fy., 17½; fy., 15¾ .. ch., 14; Calimyrna, extra fy., 25; fy., 23½; packages, ch. to fy., 12 10s, 1.75@1.80; 24 8s., 2.90@2.95; 50 6s, 4.30@4.40; 70 4s, 4.40@4.50.

Pears—Bulk basis: Fy., 19½; extra ch. 17; ch., 15½; standard, 12@14.

Apples—Lb.: Extra ch. to the evaporater, 13½; jobbing price, 14½.

Apricots—Standards, 9½; ch., 13; extra ch., 14½; fy., 16; extra, 17½; Moorparks, 19; slabs, 11.

RICE

Prices which rice millers of this state have voluntarily agreed with the food administration for California to pay to growers for paddy rice are as follows:

No. 1 and No. 2 Japan, in sacks, $4.32 per 100 pounds.

No. 3 and No. 4 Japan, in sacks, $4.16 per 100 pounds.

Prices for other grades will be paid for on a basic value proportionate, and no higher prices than those quoted above for any grades whatever will be paid.

The millers agree further to sell cleaned rice and by-products for prices not to exceed the following:

Fancy Japan, 1½c per pound.
Choice Japan, 7⅜c per pound.
Fancy second heads, 6⅞c per pound.
Screenings, 5⅝c per pound.
Brewers', 5¼c per pound.
Rice polish, $50 per ton, carlots.
Rice bran, $36 per ton, carlots.

NUTS

The Almond Growers' Association has established opening prices as follows per pound:

Nonp. 27½
I.X.L. 25½
Ne Plus 24½
Drake 20

Outside dealers have named prices above these quotations and it is understood association stock is practically closed out and prices withdrawn.

Walnuts: Net prices have been named by the California Walnut Growers Association:

No. 1 Softshell 28
No. 2 Softshell 25
Jumbo 30
Fancy Budded 31½
Golden Gate Budded 29

Franquettes, Eurekas and other fancy varieties sold on sample. No. 1 Softshell guaranteed 88 per cent good; Fancy Budded, 90 per cent. In case of worms or damage by ants not more than five per cent.

HONEY

Cash to producers, country loading points:

Extracted, Water White, supplies very light, 22@23½; White Sage, supplies very light, 20@23; Light Amber, supplies very light, 18@20½; Dark Amber, 18@19 lb.; Beeswax, supplies moderate, 35@40 lb.

GRAIN

Wheat—Following are net weight prices for bulk grain, based on federal standards and grades at San Francisco Bay and Los Angeles terminals:

Hard Wheat—	Per Bushel	Per Cental
No. 1	$2.20	$3.62 2-3
No. 2	2.17	3.61 2-3
No. 3	2.13	3.55
Soft White—		
No. 1	$2.18	$3.63 1-3
No. 2	2.15	3.58½
No. 3	2.11	3.51 2-3
Club and Sonora—		
No. 1	$2.16	$3.60
No. 2	2.13	3.55
No. 3	2.00	3.48 ½

For sacked grain add nine cents per bushel of 60 pounds to above price. Deduction of three-fourths of a pound is made for weight of standard grain bags. Wheat grading under No. 3 and mixed or smutty wheat will be purchased according to merit.

Barley — Feed, 2.17½@2.22½ per cental for choice spot; shipping, 2.25-2.27½; milling, nominal.

Oats—Red feed, 2.35@2.55 per cental; seed, do, 2.85@3.00, white recleaned at 3.15@3.20.

Corn — Egyptian, 2.75@3.00 per cental for choice white; Milo, 2.65@2.70. Rye nominal.

HAY

Under date of December 21, Scott, Magner & Miller says:

Receipts the past week 775. Trade during the week has been extremely light as it usually is at this season of the year, holiday shopping being about the only business going on. Considerable damaged hay, mostly alfalfa, arrived from the river districts and has been offered at figures that cannot possibly be satisfactory to the producers but this hay must be disposed of as it arrives as it is not in condition to keep any length of time and therefore must be sold by consignees at whatever prices can be obtained. This, naturally, hurts the sale of hay in good order and until such time as this damaged hay stops coming forward the market must necessarily take on an easy tone. We suggest holding consignments until after the first of the year.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market. For prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.

Fancy Wheat Hay (light 5 wire bales) .....25.00@27.00
No. 1 Wheat or Wheat and Oat Hay .....23.00@25.00
No. 2 Wheat or Wheat and Oat Hay .....17.00@21.00
Choice Tame Oat Hay .....22.00@24.50
Other Tame Oat Hay .....17.00@20.00
Wild Oat Hay .....17.00@19.00
Barley Hay .....17.00@19.00
Alfalfa .....15.00@19.00
Stock Hay, in order .....15.00@18.00
No. 1 Barley Straw, bale .....50@80

Damaged hay, all kinds, according to condition.

SEEDS

Flax .....8@8½
Millet .....5@5½
Rape .....2½@5

Citrus Fruit Market

Los Angeles, Dec. 24, 1918.

Oranges are selling at almost abnormal prices and practically all holiday offerings have been cleaned up.

Lemons on the contrary, have been in a most unsatisfactory condition and some exceptionally low sales have been made.

Shipments

Shipments of citrus fruits to date since November 1, 1918: Southern California: oranges 1004 cars, lemons 1042, total 2046. To same date last season; oranges 2053, lemons 481, total 2534. Central California this season; oranges 2564, lemons 217, total 2781. Last season to same date; oranges 1556, lemons 541, total, 2097. Northern California; oranges 194, last year same date, 171.

AT THE AUCTIONS

December 18

New York: 11 Nav., 1 Val., 3 lem. Nav. 3.90-6.85, Val. 5.75-7.35, Ariz. Nav. 5.20-5.45, lem. 1.95-3.70.

Pittsburg: 2 Nav., 1 lem. Nav. 4.35-6.90, lem. 4.50-6.45.

St. Louis: 6 oranges. Nav. 1.90-5.65, Val. 4.80-5.60.

December 19

New York: 12 oranges, 4 lem. Nav. 5.15-7.65, Ariz. Nav. 4.75-5.25, Val. 5.30-7.30, lem. 2.70-4.30.

Boston: 3 oranges, 2 lem. Nav. 6.10-6.55, lem. 3.45-4.25.

St. Louis: 4 oranges, 1 lem. Nav. 3.00-4.50, lem. 4.10-5.35.

December 20

New York: 13 oranges, 2 lem. Nav. 4.25-7.00, Val. 5.05-6.80, lem. 2.55-4.35.

Boston: 7 oranges, 1 lem. Nav. 4.60-6.35, lem. 2.35-4.15.

St. Louis: 3 oranges, 2 lem. Nav. 3.70-5.30, lem. 2.70-4.60.

Pittsburg: Nav. 3.65-5.40.

Cleveland: 6 oranges, 1 lem. Nav. 4.15-5.35.

December 23

New York: 15 oranges, 3 lem. Nav. 4.35-7.10, lem. 2.65-4.90.

Pittsburg: 6 oranges, 2 lem. Nav. 1.95-5.20, lem. 4.20-6.05.

Boston: 7 oranges, 5 lem. Nav. 4.30-5.75, lem. 2.70-3.40.

St. Louis: 6 oranges, 1 lem. Nav. 3.85-4.80, Val. 3.25, lem. 3.05-3.90.

BRITISH COTTON MILLS ASKING FOR AMERICAN COTTON

The managements of cotton mills in England are asking the government for more tonnage for the transportation of cotton from America. They declared that the increasing shortage of raw cotton was likely to cause the mills to be closed unless immediate steps were taken to increase the supply.

The Official United States Bulltin, published under order of the President, chronicles all official operations of the government. It is sent without charge to officials of the United States government and governmental institutions. To private concerns a charge of $5.00 a year or $3.00 for six months is made, the same plan that is now in effect regarding the sale of the Congressional Record.

The war has aroused a sleeping world to the possibilities of accomplishment. We never before knew how to attack problems.

The maximum price for milk in Rome has been fixed at 18 per quart. In 1914 the price was from seven to eight cents per quart.

ARMSTRONG NURSERIES

The 1919 Armstrong Nursery catalogue is fully up to its predecessors. It is printed on fine paper, giving opportunity to bring out the full beauty of the large number of half tone engravings. However, we note that in size the catalogue is somewhat reduced in order to follow the war time conservation program of saving of paper. If the Cultivator is mentioned the catalogue will be sent for the asking by writing Armstrong Nurscries, Ontario.

WEATHER CONDITIONS

San Francisco, Cal., Dec. 21, 1918

Stations	Rainfall Wk.	Rainfall Season.	Rainfall Norm.	Temp. Max.	Temp. Min.
Eureka	1.18	11.60	14.45	56	86
Red Bluff	.38	14.45	8.56	62	84
Sacramento	.22	7.39	5.88	54	82
San Francisco	.33	11.02	6.71	62	44
San Jose	.30	9.91	5.03	58	80
Fresno	.09	3.84	2.94	52	86
San Luis Obispo	.32	7.37	4.87	62	34
Los Angeles	.02	3.98	4.00	70	48
San Diego	.62	4.14	2.39	66	44

The L. A. P. A. Show

Written for California Cultivator By Jean A. Koethen

LOS ANGELES poultry lovers are fortunate this year in having an opportunity to visit three shows instead of the single show of former years. First came the Liberty Fair show, which was unavoidably postponed from October to December. Last week, following close on the heels of the Liberty Fair, came the Los Angiles Poultry Association's show in the Coulter Building on Broadway, and we have the January show still to look forward to. Whether or not such a multiplying of shows is a good thing for the industry, it certainly gives every breeder ample chance for showing his birds and every one who wants to know who's who in poultrydom opportunity to find out.

The L. A. P. A. show was a good show in every way. Naturally the number of entries was smaller than that of the midwinter show in former years, but the quality was of the best, and 670 birds, the official number of entries, is about as many as one can look over intelligently at one time. This number does not include pigeons, which occupied the second floor, nor the pheasants which shared the front window honors with a magnificent Bronze turkey, but it does include chickens, turkeys, geese and ducks.

A number of new names appeared on the breeders' cards, and there were many of the old standbys, among whom were noted Mrs. E. B. Martin, E. E. Emerson, Mrs. Walter Babb, Goodacre Bros., the Hocking Poultry Farm, Mrs. Ben Davis Jr., Gill & Warrick, J. Fowler, J. C. Pike, F. X. Price and Geo. W. Masterson. Rancho Del Martino and E. E. Emerson took most of the White Leghorn ribbons, and this class was extremely creditable. The first pullet, a dainty beauty of perfect Leghorn type, took four ribbons beside the blue. Any one who imagines White Leghorns are utility birds only had only to take a look at Leghorn Alley to be convinced that they are the best of show birds as well.

The first R. I. R. cock displayed more ribbons than any other bird in the show, having three color specials, three shape specials and a special honor ribbon. He was a bird of wonderful mahogany color, and the fact that there were six points on his comb did not seem to worry him at all. Color in Reds has grown darker from year to year as standard requirements became darker and more definite. One sees few of the lighter colored birds. It is necessary, I am told by breeders to insist on dark color because the lighter shades fade.

The $50 Liberty Bond offered by the Globe Grain and Milling Company for the best display of standard poultry was won by the Hocking Poultry Farm, which exhibited a remarkably fine string of Anconas, the best pen being particularly good, both in color and type. Another Liberty Bond, offered by the executive committee for the best display of any one variety from Northern or Central California, was won by L. B. Cary of Reedley, whose string of Dark Cornish seemed to my uncritical eye to be the finest ever shown in Los Angeles. The Dark Cornish are birds whose remarkable exhibition qualities do not always appear at first glance. One needs to study them to appreciate their color and shape.

Barred Rocks were an unusually large class, and the ribbons were divided among over a dozen exhibitors. When this is the case it always speaks well for the estimation in which a given breed is held by the community at large. It is possible for one exhibitor, who has bred or purchased a fine long string of birds, to come into a show and clean up all the ribbons, with only one or two competitors, or perhaps with none at all. In this respect it has always seemed to me our poultry show system is far from perfect. When a breeder advertises "1st 2nd, 3rd cock, 1st pullet, 1st and 4th hen," etc., at a given show, who knows how many birds were in the competition? It is very easy to get the blue sometimes.

Black Minorcas were a large class, in spite of the fact that J. V. McConnell of Garden Grove, who is usually a large exhibitor, entered no birds. A prize offered by Mr. McConnell for the best Black Minorca female (McConnell strain), and another offered by E. B. Martin for the best display of Minorcas, both went to a New Jersey man, A. Albright, Jr., of Newark. So far does Mr. McConnell's candle throw its beams.

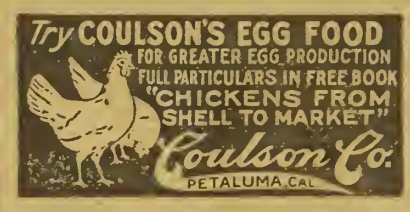
There was one pen of Black Rhinelanders, a comparatively new breed, and another of an absolutely new breed called the Missouri White Fluff, birds whose claim to distinction seems to be that their feathers look more like fur than fluff. There were half a dozen pit games and the usual number and variety of bantams.

Besides the New Jersey Minorcas there were White Wyandottes from Oregon and Barred Rocks from Oregon, and an entry of Light Brahmas from Salt Lake City. There were Anconas from Sacramento and Buff Orpingtons from Santa Barbara, White Rocks from Redlands and Barred Rocks from Cucamonga and Point Loma. The medal for best cockerel in Asiatic class went to James Crabtree of Oakland, whose Black Langshans took all awards but one. Black Langshans have been a rather neglected breed here of late, and it is well that we are reminded of their excellence in both show and utility lines.

Turkeys and waterfowl had a department all to themselves at the rear of the building. I have left turkeys till the last because I hardly know how to do them justice. There were 28 entries, all but two being from the yards of J. Will Blackman in Los Angeles. Mr. Blackman has certainly discovered the secret of color and size in Bronze turkeys and he must also have learned how to raise a majority of the poults he hatches. Any one who can contribute to the building up of the turkey industry, as Mr. Blackman seems to be doing, is a public benefactor. Seven Toulouse geese, and coops of Rouen, Muscovy and Fawn Runner ducks completed the ground floor display.

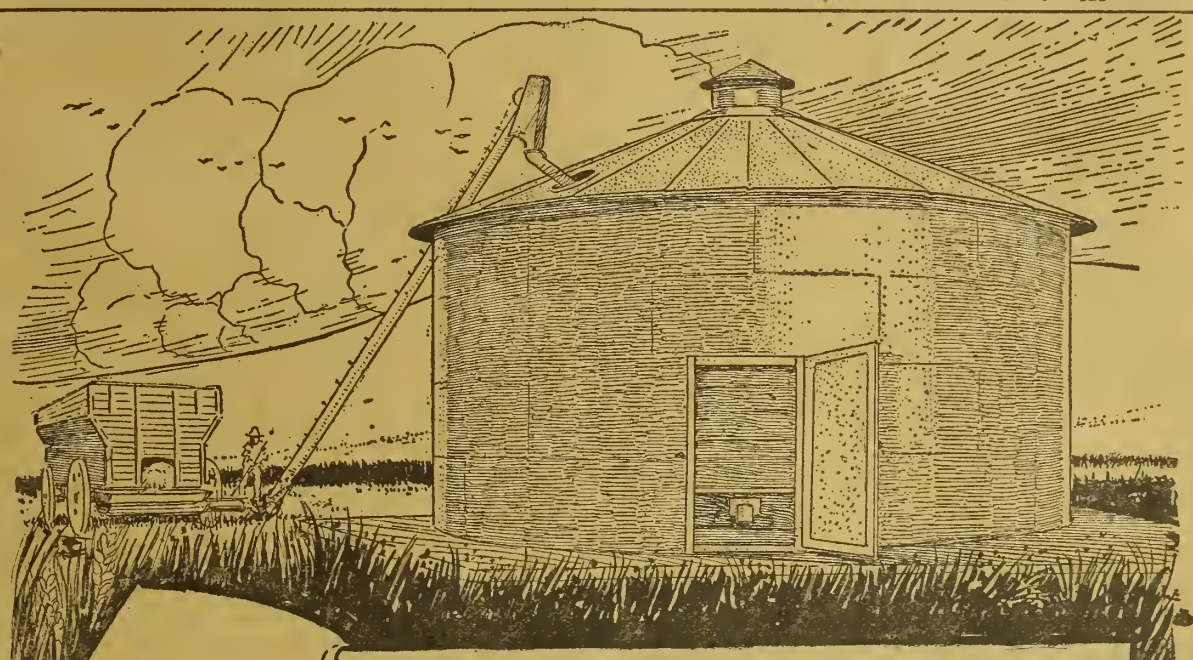
On the second floor the soft cooing of pigeons blended with the medley of crows, cackles, and quacks from the floor below. The exhibition was by no means the largest ever, but was very creditable for war time. Runts, Tumblers, Pouters, Homers, Carneaux, Jacobins and all the rest were on hand in their best clothes to say that the pigeon industry, if it can be called by that name, is fully alive, and wants only opportunity to come to its own again.

(Awards Next Week)



$1 FOR EGGS My Valuable Poultry Literature FREE. Tells how to double egg production. Results of years of Successful Experience with Hens. I tell you how to market eggs at highest prices. Send quick while egg price is up, and get benefit of long experience in Egg Production and Marketing. A. E. WOODALL 691 Globe Building, Minneapolis, Minn.

Chickens Sick?—Use Germozone
Roup, colds, bowel troubles, sore head, limber neck, etc. At dealers or postpaid 75 cts. with 5 book Poultry Library. GEO. H. LEE CO., Dept. 418 OMAHA, NEB.



Bulk Handling Costs Less

There were 16 tons of grain lost in a recent shipment of 2,500 tons of sacked grain from Vallejo to Stockton.

Mould, rats, gophers—leaking sacks—were the direct causes of that enormous loss.

The California milling concern that made the shipment handled its next shipment of 2,500 tons of grain over the same route—in bulk.

Out of 2,500 tons—only one-half of one ton of grain was lost. A saving of fifteen and a half tons! With grain at $2.20 a hundred that saving was considerable. In addition the entire cost of the sacks was saved.

Save the entire cost of Sacks.

By using sacks your crops are at the mercy of rats, gophers, bad sacks, thieves and rain. You pay for extra help during threshing time.

It is needless. Calco Metal Grain Bins eliminate extra labor and make your grain vermin, fire and weather-proof. The Calco Bin cuts out the high cost of sacks. One Calco Grain Bin will last a great many seasons—sacks must be bought each year.

Write for the booklet, "Calco Grain Bins." It's free, and worth your careful reading. It will open a way to you to save and sell more of your grain. Write for it today.

California Corrugated Culvert Co.
419 Leroy St., Los Angeles 408 Parker St., Berkeley

The Cultivator Patterns

8522—Ladies' Slip on Waist. Cut in sizes 36, 38, 40 and 42 inches bust measure. The waist is to be slipped on over the head like a middy.

8799—Ladies' and Misses' Slip on Blouse. Cut in sizes 16 and 18 years, and 36, 38, 40 and 42 inches bust measure. The blouse hangs straight from the shoulders, but is held in to the figure by a loose sash of the material.

8535—Children's One Piece Dress. Cut in sizes 2, 4 and 6 years. The dress has a tiny shoulder yoke and the lower part of the dress is brought in to fit in three broad box plaits.

8794—Ladies' One Piece Dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. The closing is on the shoulder, as the dress slips on over the head.

8534—Ladies' Apron. Cut in sizes 36, 40 and 44 inches bust measure. The pattern is in two large sections—the long front is gathered to a straight band, giving a little fulness which is very becoming.

8782—Girls' Bloomers. Cut in sizes 2, 4, 6, 8, 10, 12 and 14 years. The bloomers are cut full to give plenty of freedom.

8776—Ladies' Two Piece Skirt. Cut in sizes 24, 26, 28, 30 and 32 inches waist measure. The flat back is formed by two very wide box plaits.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH.

HOW TO ORDER PATTERNS

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest New York City styles, all pattern orders are filled in New York City. Therefore, we promise to deliver all patterns ordered within two weeks; we guarantee safe delivery of all patterns. Address

PATTERN DEPARTMENT
CALIFORNIA CULTIVATOR
Los Angeles.

Household Department

FROM DAY TO DAY

Over the sorrow and over the bliss,
Over the teardrop, over the kiss,
Over the crimes that blotted and blurred,
Over the wound of the angry word,
Over the deeds in weakness done,
Over the battles lost and won,
Now at the end of the flying year,
Year that tomorrow will not be here,
Over our freedom, over our thralls,
In the dark and the midnight the curtain falls.

Over our gain and over our loss,
Over our crown and over our cross,
Over the fret of our discontent,
Over the ill that we never meant,
Over the stars of our self-denial,
Over the strength that conquered trial,
Now in the end of the flying year,
Year that tomorrow will not be here,
Quietly final the prompter calls,
Over it swiftly the curtain falls.

Over the crowds and the solitudes,
Over the shifting, hurrying moods,
Over the hearths where bright flames leap,
Over the cribs where the babies sleep,
Over the clamor, over the strife,
Over the pageantry of life,
Now is the end of the flying year,
Year that tomorrow will not be here,
Swiftly and surely from starry walls,
Silently downward the curtain falls.
—Harper's Bazaar.

THE PRODIGAL FATHER'S NEW YEAR VOW

CHARLOTTE ANN STETSON did a very unusual thing when, on the morning of December 31, she sat down to rest. "I'm plumb tired," she said, to her little brood of rather shabby children, who had viewed, with some amazement, this unprecedented act of their usually active mother. She smiled reassuringly at them. She felt very happy, possessed temporarily anyhow, of that compensating peace that always comes to one when any of life's faraway goals has been safely reached. Just a twinge of discomfort hindered complete contentment. What would the neighbors say? There was the tiny thorn in her complacency. Public opinion in Hartsville had, unanimously in the past, condemned shiftless Jake Stetson, Charlotte Ann's unworthy husband, as an "ornery, no account, good for nothing." Some of the Hartsvillites had called him a "lazy loafer." Every man's tongue had been against him and these were but a few of the many judgments Jake's neighbors had offered, and Charlotte Ann, recalling them, wondered what they would say when they saw the splendid, rather ornate monument that was to be erected to his memory in the old hill graveyard, on that very day.

She had saved the money, dime by dime. Even spare pennies and nickels had not been despised; though she hardly acknowledged it to herself, the monument was to be a sort of atonement for all the harsh and cruel scoldings she had bestowed upon the idle and easy-going Jake when he had been with her. His shiftless ways had been such a thorn to her ambitious spirit. She arose now and going to a shelf took down and read, for perhaps the hundredth time, a well-thumbed circular. It was the horoscope of one born between July 10 and August 10, and among other prophecies was one that read "and he who is born between these dates will often manifest a strong disinclination to manual labor." Remorse was always keen within when she read this remark, and it was its compellant influence that had forced her repentant soul into the long struggle of scantiness and saving that had characterized and scrimped the past two years.

"He couldn't help it," she used to murmur; "being born in them dates, tiredness was in his very bones and me a calling him 'lazy' and 'no good' and 'ornery'."

It was in one of these remorseful spells that the idea of erecting a testimonial to the memory of the misguided martyr came to her. Jake had been lost in the waters of Bayberry Creek during the rush of its currents in an early thaw, and while he was trying to help Walt Andrus out of the stormy water into which he had slipped. "That shows," Charlotte Ann used to say to her children, "that shows that your pa was a hero, too, and deserves to be remembered just as much as any of them war fellows that try to kill their fellowbeings instead of rescuing them."

The children agreed. They had liked their happy-go-lucky father and little Jake had announced his intention of growing up to be a man "just like pa."

Charlotte Ann's maternal ambition being strong within her, she had winced at this announcement, but had consoled herself with thinking complacently that "try his best, he couldn't be just that kind of a man, seeing he was born in March and had a different horryscope."

They had never recovered Jake's body. It had probably been swept away, people said, down to the river, and perhaps to the ocean. The Canada Daily News had given him quite an obituary puff, ending with the usual quotation that greater love did not exist than that which "gave its life for its friend."

"Though Walt Andrus wan't no great friend, thought Charlotte Ann, "it was him that used to say Jake could do the least work in the most time of any man he ever seen or heard tell of." So the cheerful rays of the December sun fell upon a dazzlingly white and somewhat overgrown, rather than imposing monument, that set forth in decorated inscriptions the virtues, much magnified, of the departed Jake. It was a tall stone. It could be seen from far and near, and anyone approaching the cemetery from any direction, could not fail to be attracted by its glittering ornateness. In a wreath of roses at the top was the word, in immense letters, HERO. A little lower one could read, Jacob Stetson, Born 1875-Died 1910, and the quotation, "Greater love hath no man than this, that he give his life for his friend." Nor was this all. In a rose garlanded and covered base he that paused could read:

"Mark the Perfect Man"

"He just loved roses," said Charlotte Ann, proudly and tenderly, as she and her little brood stood reverently before the monument and admired its bountiful proportions and florid decorations "When it comes spring, we'll go into the woods and get some rose bushes and p'raps, p'raps, we may send off and get a few real, nice, pretty ones from some seed place. Your pa did like flowers so." "Pa liked most everything better'n work, didn't he," queried Ann.

"Now, Lottie Ann, you know your pa couldn't, being born tired, and we mustn't lay it against him," answered her mother.

More people visited the hill graveyard that December day than had been there before since the last Decoration celebration. The news spread and many of those who had wondered where all the money Charlotte Ann had earned, must have earned, by her constant, unremitting toil in the years since Jake passed away, knew now that here was the materialized solution of the problem. They nudged each other and smiled when they read the inscriptions, but some of them felt that they understood. Lost values have such a marvelous power of aggregation. Very few, in the face of such a proof of devotion, ventured to air their old and scornful opinions of the departed.

"After all, a woman knows her husband best," was the verdict of the jury that assembled each evening at the village store, "and after all, your man's your man, and where there is children its best to teach them to honor his memory," agreed the Ladies' Aid Society, although there were a few who, under their breath, wondered if the money the monument cost had not better have been spent in some new clothes for the rather scantily dressed offspring of the eulogized parent.

"You ought to have seen that little Lottie Ann look at Georgianna's new dress and sash this fall," said one dissenter. "Why, if eyes could have burned them up with longin', that child's would have done it.

And she told Georgianna, afterwards, that when her ma had saved up enough money to get something they all wanted, then she was going to have a pink dress, pink sash and stockings and some kid slippers. Poor child! Seems to me "'twould have been just as well to have cut down a little on that gravestone and have gotten the youngsters a few new duds." Then she muttered something doubtful, about anyone's being a "perfect man, leastways, any Stetson, living or dead." But Jake's last act had somewhat idealized him in his fellowmen's eyes, and most of them approved of Charlotte Ann's atoning memorial.

(Continued next week.)

> A Glad New Year, my friend,
> for you and yours.
> They tell me "happy" is akin
> to hap,
> And hap to chance, and luck,
> and accident,
> And the uncertain, outward
> forms of life,
> While gladness is an ever-
> swelling song,
> Within the patient soul attuned to life's
> Divinest harmonies, so then,
> my friend,
> For you and yours, I wish a Glad
> New Year.—J. D. Hammond.

"USE EVERYTHING" IDEAS

These are the days when we are using our heads to plan best use for what we have, whether it's food or clothes and whether it's for our own family or some other family that needs help in this country or abroad.

Here is a good idea worked out for war times—not a new one, but good:

This housekeeper had in her bedding closet two thin old blankets made by her grandmother in the days before the Civil War. They were worn too thin for any but summer use, and the ends had been many times shortened and rebound. One was worn in several places. This worn one was used as a comfort pad, covered with satine and tied. It really makes a much warmer covering than one would think. The other, which showed no thin places, was dyed scarlet and made into a wonderfully comfy bathrobe.

An old black worsted shawl, also belonging to her grandmother, was brought forth from an ancient trunk. It was all wool, but had turned an ugly rusty color and the moths had punctured it in several places. This was re-dyed a good black and also made into a warm bathrobe. What did she do with the moth holes? There

is where she showed a streak of clear genius. Well, there weren't many of them and they were small and one corner was embroidered with black silk in a graceful pattern of hop leaves. So she took in hand a threadful of black embroidery silk, and where she found a very tiny hole she embroidered a tiny dot; where the hole was larger a little leaf, some with little curling tendrils from the stems. And she didn't spend much time and work on the embroidery either; it was all of the free-hand, impressionistic variety.

The effect was charming—Japanese, if you like. The old shawl had fringe all around and was six feet square. One end was cut off at the shoulders, leaving the shawl long enough to almost touch the floor. Some of the fullness was taken out at the shoulders, the rest gathered into a cape. The two ends of this strip—where the fringe turned the corners—were sewed together and shaped into a graceful collar, and two pieces from the middle — with fringe on one side — were used for the armholes cut in the cape. This made a really beautiful and distinguished looking lounging robe. And don't let anybody tell you we haven't good dyes any more, for we have. Where one carefully follows directions the results are entirely satisfactory.

Ideas Exchanged

Above is a small contribution from one woman's experience. Let us have some of yours. Any hints along the economy or conservation line will help many of us. The Cultivator will be glad to receive and publish them and for each published will pay a six months' or twelve months' extension of subscription.

KEEP STEP

Even in the most delicate dessert sugar economy can be practiced. Dark syrups are excellent in dark ice creams, honey is delicious in a frozen dessert and maple mousse is a favored delicacy.

Ice Cream

One quart thin cream, one tablespoon vanilla. Sweeten with three tablespoons sugar, one-half cup corn syrup, cane syrup, maple syrup or honey—or one-third cup light syrup, one-third cup honey or maple syrup—or two-thirds cup honey or maple syrup. For variations add two-thirds cup unsweetened peach pulp or other fruit or one and a half squares chocolate. Vanilla may be reduced one-half when maple syrup is used.

TALE OF A PIPE

It was quite the unusual thing for O'Connor to turn up late to his work and great was the surprise when he got in one morning ten minutes after time.

"Hello! This ain't usual!" said the foreman. "Did you miss the train?"

"No," answsred O'Connor, "but when I got to the car, begorrah, I found I had forgot my poipe. Home I rushed, and the missus says: 'Phwativer is to do?' 'Shure, I've forgot my poipe!' says I. 'Ye great loon,' says she, 'it's in your mouth!' And, bejabbers, so it was; but if she hadn't seen it I should have come without it, after all."

"Don't be discouraged. Faith is not a sentiment, but an act of will.

"Don't wish you were serving in some different line from that you are in. You are needed where you are.

"Don't criticise unless your criticism is constructive, and will help.

HOUSEKEEPING HINTS

A tablespoon of washing soda and a cup of vinegar poured down the sink will clean out the most stubborn of clogged pipes.

A piece of starched net or lace put under a hole in a lace curtain will be hardly visible when pressed smooth with a warm iron.

Grape leaves laid between layers of pickled cucumbers are as good (and more wholesome) as alum to retain the fresh, green color.

A root of horseradish, washed, scraped and put in the vinegar jar will keep the strength of the vinegar and add a pleasant pungent flavor.

When roasting meat add a few drops of vinegar to water used for basting to make the meat more tender.

Lemon juice mixed with salt will remove iron rust; wet the spot with the mixture and then hold over a vessel of hot water.

Use a snap clothes pin in the kitchen to help in turning pies and cakes in the oven.

An excellent remedy for mildew is to saturate an article with kerosene. Roll it up and let it stand for 24 hours and then wash in very hot soadsuds.

Fruit canned without sugar can be sweetened later by opening and reheating with sugar, sorghum, molasses, sugar cane syrup, white syrup, beet syrup, honey, or maple sugar.

Syrup made by reducing the juice of grapes, apples or pears to one-seventh of the original volume can be used in preserving, in canning or on the table to replace sugar to a great extent.

All fruits can be canned successfully without sugar for future jelly making, pie filling, and marmalades. Can in hot water, in their own juice, or the concentrated juice of apples, pears, or grapes.

Fresh fruits and green vegetables used freely in the diet will cut the demand for very sweet desserts.

Too much sugar is used on the American table, with a consequent loss of variety and piquancy of flavor. The nutty flavor of grains, the natural sweetness of cornbread, the distinctive flavor of fruits and the real coffee taste are too often smothered with sugar.

For dark cakes, and chocolate, coffee, or caramel ice cream use half and half sugar and molasses. For light cakes and light creams use half and half sugar and white syrup.

If fruit is allowed to become soft ripe on the trees it will acquire enough sugar on its own account to make it very palatable for canning without sugar. Where fruit is abundant, can ripe fruit in its own juice.

Serve very ripe, sweet peaches, pears and figs without the addition of sugar.

Drying fruit concentrates the sugar. The amount of sugar in some fruits is over 50 per cent. Dried fruit makes excellent jam, pickles, salads and ice cream, and when eaten as stewed fruits needs less sugar than fresh fruit.

Some get rich on small incomes; others die poor on large ones. And the difference is thrift.—Cottrell's.

"The spaces of land and sea are nothing where common purposes bind."—General Pershing.

There are many substitutes for wheat flour but no substitutes for peace.

BEET COFFEE FORBIDDEN IN OCCUPIED BELGIUM

A certain Teutonized Brussels paper advised its readers some time ago to use roasted beets among other things as a substitute for coffee, and then it was forced by the chicory division—a German invention—to recall that a decree of November 22, 1916, forbids private individuals to roast beets. The consumers may replace the latter, it said, by peas, grape pits, raspberry and blackberry seeds or by broad beans.

In the preparation of his "coffee," therefore, the inhabitant of invaded Belgium had a veritable embarrassment of riches to choose from among the various "ersatz" mentioned above, as well as numerous others.

LOST HEARING

Aunt Elvira rushed into the house hysterical. "I've lost my hearing!" she shouted.

"You have?" her frightened sister shouted back. "How do you know?"

"See that man out there playing that hand organ? Well, I can't hear a single note!" and Aunt Elvira wept afresh.

"That's a moving picture photographer at work," snapped her sister.

IRONCLAD KHAKI

(Twill Cloth)

Uncle Sam's Boys and Girls both wear garments of

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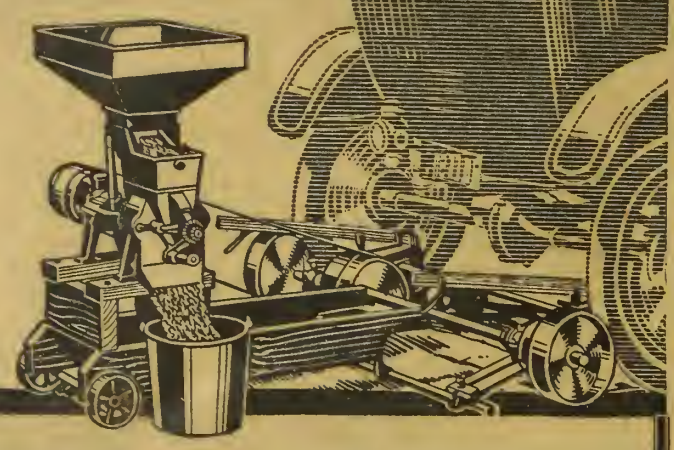

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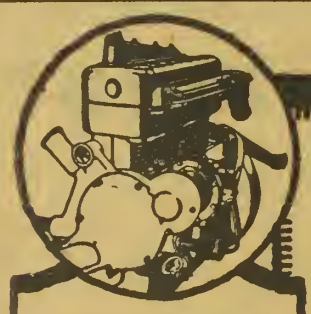

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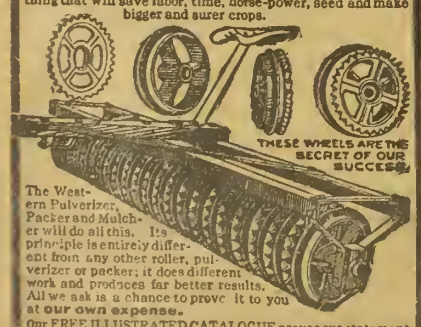

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